

ANALYSIS OF HOSPITAL BUSINESS DEVELOPMENT STRATEGIES THROUGH DIGITAL MARKETING MIX IN THE ERA OF NATIONAL HEALTH GUARANTEE (JKN)

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ABSTRAK : NALISIS STRATEGI PENGEMBANGAN USAHA RUMAH SAKIT MELALUI BAURAN DIGITAL MARKETING DI ERA JAMINAN KESEHATAN NASIONAL (JKN)

Penelitian ini bertujuan untuk menganalisis strategi pengembangan bisnis rumah sakit melalui bauran pemasaran digital di era Jaminan Kesehatan Nasional. Sejak diberlakukannya Jaminan Kesehatan Nasional (JKN), persaingan antar rumah sakit untuk mendapatkan pasien dari program ini semakin meningkat. Oleh karena itu, rumah sakit perlu mengembangkan strategi pemasaran digital yang efektif untuk membedakan satu rumah sakit dengan rumah sakit lainnya. Penelitian ini menggunakan metode studi literatur sebagai desain penelitian. Data yang digunakan dalam penelitian ini merupakan data sekunder yang diperoleh dari berbagai sumber studi literatur. Teknik pengumpulan data dalam penelitian ini melibatkan pencarian yang sistematis dan menyeluruh untuk mengumpulkan informasi yang relevan dan dapat diandalkan terkait dengan topik yang diteliti. Hasil penelitian menunjukkan bahwa bauran pemasaran merupakan konsep utama dalam pemasaran modern sebagai seperangkat alat pemasaran taktis yang dapat dikendalikan dan dipadukan oleh rumah sakit untuk menghasilkan respon yang diinginkan pada pasar sasaran. Penerapan bauran pemasaran digital sangat dibutuhkan oleh rumah sakit untuk memberikan pelayanan yang maksimal. Program JKN telah dijadikan suatu bentuk jaminan kesehatan yang memberikan kemudahan bagi masyarakat yang menggunakannya. Dengan JKN, masyarakat bisa mengeluarkan biaya perawatan rumah sakit yang lebih hemat.

Kata Kunci : Rumah Sakit, Pengembangan, Bauran Pemasaran, Digital, JKN

ABSTRACT

This research aims to analyze hospital business development strategies through the digital marketing mix in the National Health Insurance era. Since the implementation of the National Health Insurance (JKN), there has been increased competition among hospitals to get patients from this program. Therefore, hospitals need to develop an effective digital marketing strategy to differentiate one hospital from another. This research uses the literature study method as a research design. The data used in this research is secondary data obtained from various literature study sources. The data collection technique in this research involves a systematic and thorough search to collect relevant and reliable information related to the topic under study. The research results show that the marketing mix is a main concept in modern marketing as a set of tactical marketing tools that can be controlled and combined by hospitals to produce the desired response in the target market. The implementation of a digital marketing mix is really needed by hospitals to provide maximum service. The JKN program has been made into a form of health insurance that is easy for the people who use it. With JKN, people can spend less on hospital care costs.

Keywords : Hospitals, Development, Marketing Mix, Digital, JKN

INTRODUCTION

Technological developments have an impact on various areas, such as health. Health is a very important aspect of life and is a fundamental human right. Constitutionally, fulfilling the health of citizens is part of the Government's responsibility (Sari,

2023). Hospitals are one of the elements required to improve the service system to have good quality. National Health Insurance (JKN) is a Government initiative that aims to provide comprehensive health insurance for all Indonesians, ensuring they can live healthy, productive and prosperous lives. This

program provides health protection to participants so that they benefit from health care efforts and protection of basic health needs. In Indonesia, the implementation of National Health Insurance (JKN) by the Health Social Security Administration (BPJS) has forced hospitals to adapt to new dynamics involving centralized payment systems and increased competition in the health services market. The National Health Insurance Program (JKN) is moving towards universal health coverage (UHC) by implementing the INA CBGs payment system. With this system, the health sector, one of which is hospitals, is required to carry out efficiency in all lines of health services for patients, all of which are regulated through INA CBGs package. This encourages hospital management to change strategies for using existing resources in providing health services to patients, while maintaining service quality and patient safety (Arismen et. al., 2019).

A hospital is an institution tasked with the health service sector, responsible for providing comprehensive services to individuals which include promotive (improving health), preventive (preventing disease), curative (curing) and rehabilitative (recovering) efforts, in accordance with the provisions stated in Law Number 44 of 2009 concerning Hospitals. The hospital felt it was important to develop a strategy that met market demand and differentiated it from its competitors. Hospitals are required to not only maintain their market share but also increase their competitiveness through appropriate business development strategies. The required marketing strategy not only pays attention to the external conditions where consumers are located, but also carries out an objective evaluation of internal conditions (Sutedjo, 2022). However, since the implementation of the National Health Insurance (JKN), there has been increased competition among hospitals to get patients from this program. Therefore, hospitals need to develop an effective digital marketing strategy to differentiate one hospital from another. This is because the implementation of JKN has changed the landscape of health services in Indonesia, including in terms of payment procedures, regulations and cost arrangements. Based on this phenomenon, hospitals need to adjust their business strategies to comply with this policy to ensure sustainability and profitability. One of the business strategies related to the JKN era is a promotional strategy. Health service promotion strategies are efforts to market or advertise services to the wider community.

In the context of hospital management, this strategy is very important to introduce the types of services available. As in other business fields that

introduce their products, hospitals also need to introduce their service programs to patients and the public. Promotional strategies for hospital health services and other health facilities are similar to general marketing strategies, with the main aim of promoting and introducing hospitals and the services they provide (Chendra, 2023). The existence of a social security administration body creates demands for hospitals to continue to develop new innovations, make improvements and improve continuously. Hospitals that partner with JKN or follow government policies and maintain collaboration between agencies are one of the main challenges faced. One strategy to face competition is to design a marketing strategy that integrates institutions with existing JKN policies and programs (Solechan, 2019).

Hospital marketing strategies aim to increase service use by providing health services that suit consumer satisfaction needs and priorities. Through this marketing strategy, it is hoped that the hospital's image can be improved thereby increasing public trust in the services provided, by utilizing resources optimally. The patient's or family's decision to choose a hospital or use the services available will make a positive contribution in increasing the number of potential customers and strengthening patient loyalty to the hospital, which will ultimately have an impact on increasing income (Anisa, 2015 in Ekawati & Andriani, 2022). Digital marketing is an important strategy in facing this era of digitalization, where consumers (patients) increasingly rely on the internet and social media to search for information about health services. These changes not only require hospitals to improve operational efficiency, but also expand their marketing and communications strategies.

Digital marketing is becoming increasingly relevant in this context, as consumers (patients) now tend to search for information about healthcare services online, using search engines and social media to compare service options before making a decision. Marketing mix is one of them. The strategy mix is the strategy used by a company to achieve organizational goals and meet consumer needs. Originally consisting of four elements known as the 4Ps: product, price, place and promotion (product, price, place, promotion), the marketing mix has now evolved to seven elements. Apart from the initial elements, additional elements include people (personnel), processes, and physical evidence. This marketing mix is a tool controlled by the company to achieve the desired response from the target market, including aspects such as quality products at affordable prices, effective promotional strategies, efficient distribution, the role of personnel in service,

optimal operational processes, and physical evidence that shows the quality of the product or service (Kotler & Kevin, 2016 in Dysyandi et. al., 2019). This strategy not only focuses on increasing awareness and patient acquisition through digital marketing, but also involves the use of technology to improve operational and service efficiency, as well as strengthening the hospital's brand image in the eyes of consumers. By implementing the marketing mix effectively, companies can strengthen their competitiveness, meet consumer expectations, and achieve strategic goals in a competitive market environment.

In this way, hospitals can strengthen their competitiveness, meet consumer expectations, and strengthen their brand image through implementing effective, technology-based marketing strategies. Modern marketing strategies not only integrate traditional elements such as product, price, place, and promotion, but also incorporate digital aspects such as online marketing, use of social media, and consumer data analysis. By utilizing a marketing mix that includes well-trained people (personnel), efficient operational processes, and physical evidence that shows quality of service, hospitals can increase their visibility in the market, increase patient satisfaction, and build an image as an innovative health service provider. and trustworthy. Therefore, this research aims to analyze hospital business development strategies through the digital marketing mix in the JKN era.

RESEARCH METHODS

This research uses the literature study method as a research design. This method was chosen because the aim of this research was to analyze hospital business development through the digital marketing mix in the JKN era. The data used in this research is secondary data obtained from various literary study sources, such as scientific journals, articles and textbooks related to business strategy in the JKN era. The data sources used in this research were selected by selecting journals, articles and books that were relevant to the research topic in the last 5 years. Selection is carried out using certain criteria, such as accuracy, novelty and credibility of the data source. Furthermore, the data collection technique in this research involves a systematic and thorough search to collect relevant and reliable information related to the topic under study.

RESULTS AND DISCUSSION

Health development is part of national development in Indonesia. Health development aims to increase the ability and awareness of healthy living

for every community, so that optimal public health can be realized in Indonesia. Health is an important thing for every human being, where health problems have become a basic need for society. With the increase in people's living standards and people's lifestyles, people's demands for the importance of health and the quality of health in Indonesia are also increasing.

Hospitals as one of the health facilities that provide health services to the community have a very strategic role in accelerating improvements in the level of public health. According to the 1954 Constitution, it is also emphasized that "Everyone has the right to live a healthy life and obtain health services". National Health Insurance increases the use of health services by the community.

Increasing public demand for fulfilling daily needs has caused competition in the business world to become increasingly high. For service companies, the main tool that is a weapon in competing is a quality service system. Service quality is the key to success in getting good ratings from consumers. The demands that are increasingly being complained about by the public must be carefully considered by hospitals to improve the health services provided, especially when weighed by social media which can be a tool to convey public complaints if according to the community the services provided do not meet the standards (Marchetta, 2022). Therefore, many business people are trying to run their businesses in the health sector, such as hospitals, because hospitals will always be needed by people, especially with government programs including BPJS health insurance or other insurance from companies that collaborate with government hospitals. or private. Therefore, the hospital is making efforts through marketing so that people can use JKN. Marketing is the process of preparing integrated communications that aims to provide information about goods or services in relation to satisfying human needs and desires. (Rizma & Budhiarta, 2019).

This research uses theory according to Kotler and Keller, 2007. The definition of marketing mix is a device consisting of product, price, promotion and distribution, which will determine the level of marketing success and all of this is aimed at getting the desired response from the target market. Based on the results of the literature, according to research (Winarti, Samad & Pratiwi, 2023), some people who are seeking treatment still do not use JKN, so many people incur a lot of costs. This can be done by the hospital to implement a marketing mix for the JKN program. Through the company's digital marketing mix it is easier and more efficient. Digital marketing carried out by hospitals is more popular with the

public because it is easy for the public to find information and does not waste time being present at the location or is more affordable to get the information.

The digital marketing mix is a set of marketing tools that a company uses to continuously achieve marketing goals in its target market. This method uses components of elements that form a mixed strategy, which you want to design with the intention of generating the response you want from the target market.

Based on the results of the literature, the marketing mix is a main concept in modern marketing as a set of tactical marketing tools that can be controlled and combined by hospitals to produce the desired response in the target market. Related to the marketing mix that is considered by hospitals in preparing marketing programs. Preparing the marketing mix program includes:

1. Media Content Marketing
Development of health service information through social media in the form of E-Flyers, creative videos of superior hospital services, promotion of hospital health services, health education content that is easy for the public to understand, as well as interactive discussions with resource doctors (health talks/podcasts) online.
2. Collaboration Transformation Transforming Hospital Services with a Digital Transformation Agenda JKN Services and Insurance Guarantee by aligning and supporting government and

private health insurance programs and providing easy, fast and informative access.

3. Expand Social Media Networks
Social media has become the main platform for most internet users. This platform is the right place to do digital marketing for hospitals. You can upload interesting video, image or other media content about hospitals via Facebook, Instagram, YouTube and other platforms.
4. Optimizing Patient Services
Optimize services according to participant/patient needs by referring to hospital accreditation standards. Providing wholehearted service according to the wishes of the community regarding promotions through online media so that the public is able to assess online the level of customer satisfaction with the system when providing services via telemedicine and offline.

Based on the description above, it can be seen that the implementation of a digital marketing mix is really needed by hospitals to provide maximum service. The JKN program has been made into a form of health insurance that is easy for the people who use it. With JKN, people can spend less on hospital care costs. This is also supported by research conducted by (Rochmawati, 2021) that in the era of globalization, hospitals are increasingly required to improve the quality of their services. Thus, hospitals must be managed professionally by paying attention to the marketing mix.

Author	Title	Journal name	Method (design, population, sample variables, instruments, analyses)	Result
Arismen ¹ Wahyu Sulistiadi ² Amal Chalik ³	Marketing Mix Strategy for Health Services RSD Kol. Abundjani Bangko in the Era of National Health Insurance (JKN)	Journal of hospital administration, 5-2-1019	Design: qualitative Sample: director, head of service, head of administration, head of nursing, and head of service unit Variable: marketing strategy for health services at RSD Kol. Abundjani Bangko Instruments: interview guide and recording equipment Analysis: Chi square	The research results obtained are with the marketing mix strategy. RSD Kol. Abundjani Bangko can still provide quality services to patients with conditions in the era BPJS that have a budget deficit
Abidah Ismail Lubis	The influence of The quality	Scientific Journal, 7-04-2022	Design : Quantitative using a cross sectional approach	The results of the multivariate analysis showed that the variable

	of Doctor services and Physical Evidance on the Loyalty Of Inpatients		Population : patients who were hospitalized Sample : 82 people Variable : independent variable is quality of doctor service dand physical appearance, depend variable is patient loyalty Instrument : questionnaire and interview Analysis : logistic regression analysis	quality of doctor services ($p = 0.001$) and physical evidence of the hospital ($p = 0.004$) proved to have an effect on patient loyalty
Miftahul Jannah ¹ , Didi Mulyadi ²	Analysis of the quality and facilities of health services at The pratama Umi Rahma Clinc Bekasi City	Development economics, 3-2-2022.	Design : descriptive Qualitative approach Population :patients in uni pratama clinic for 2 months, namely June-July Sample : random samples for one week Variable : variables that cause a phenomenon or social reality Instrument : observations and interviews	Based on research that has been carried out, the service provided is good from various aspects, but needs to be improved. While the facilities provided at the Pratama clinic are quite complete, there is a need for additional units and equipment improvements.
Kurniawati ¹ dan Chalimah ²	The influence of Competence and Motivation on the Performance of Clinical Guidelines in Hospitals	Journal of Economics and Business, 27-01-2024	Analysis : qualitative Design : correlative approach Populations : Sample: 32 clinical instructors Variable : independent variable competency and motivation, dependent variable clinical suoervisor performance Instrument : questionnaire and data clinical supervisor administration at the Hospital Analysis : multiple Regression	competence contributed positively and significantly effect on the performance of clinical instructors, the motivation of clinical instructor had a positive but not significant effect on the performance of clinical instructor, the competency of clinical instructor and motivation of clinical instructor had a positive and significant effect on the performance of clinical instructor.
Sriyani Windarti ¹ , Mohammad Ardani Samad ² , Reski Dewi Pratiwi ³	Analysis of Influence of Marketing Mix on the Use of Outpatient Services in Hospital Makassar in 2021	Public Health and Medicine Journal (PAMA), 1-1-2023	Design : kuantitatif with cross sectional study Population : out patient department at RSUD Haji Makassar Sample : 385 respondent Variable : independent variable marketing mix dependent variable use of outpatient services at RSUD Haji Makasar Instrument :questionnaire	There is significant influence between the marketing mix with product, people, physical evidence and process with the use of outpatient services in Rumah Sakit Umum Daerah Haji Makassar, There is no significant influence between the marketing mix with place,

Luh Putu Sinthya Ulandari ¹ , Yaslis Ilyas ² , Putu Ayu Indrayathi ³	Strategy for Implementing National Health Insurance using the Balanced Scorecard Methode: Case Study at Hospital X Tangerang in 2018	Indonesia Journal of Health Economics, 5-2-2018	<p>Analysis : simple regression linear test</p> <p>Design : qualitative approach with Balanced Scorecard method</p> <p>Population : informants from hospital and informants from BPJS Kesehatan.</p> <p>Sample : 9 informants</p> <p>Variable : compare the findings with theories obtained or from other previous research obtained from literature studies and through document searches</p> <p>Instrument : depth interviewed and review the document</p> <p>Analysis : thematic analysis</p>	<p>price and promotion process with the use of outpatient services in Rumah Sakit Umum Daerah Haji Makassar</p> <p>The results show that there are several strategies that have been developed and implemented, including:</p> <p>(1) financial perspective (adding types of services, increasing the capacity of inpatients and polyclinics, increasing doctor practice slots, completing medical equipment, applying the principle of low cost and increasing working capital); (2) customer perspective (choosing target market, develop 5 values propotion, complaint management); (3) internal business processes perspective (develop standard operating procedures, develop drug formulary and clinical pathways, carry out operational and audit controls, build business models, form case mix teams and claim management); (4) learning and growth perspective (develop training, giving reward and good salaries, build a competitive work environments, and pay attention to employee career paths). Through this strategy, X Hospital is able to implement the JKN Program well and still record a surplus without sacrificing service quality.</p>
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CONCLUSION

A hospital is an institution tasked with the health service sector, responsible for providing comprehensive services to individuals which include promotive (improving health), preventive (preventing disease), curative (curing) and rehabilitative (recovering) efforts, in accordance with the

provisions stated in Law Number 44 of 2009 concerning Hospitals. With technological developments, currently hospitals are faced with the era of National Health Insurance (JKN) so that every hospital needs to plan marketing strategies so that they can gain their own advantages in the competitive arena and have products that suit

consumer interests through various support from marketing resources. The implementation of a digital marketing mix is really needed by hospitals to provide maximum service. The JKN program has been made into a form of health insurance that is easy for the people who use it. With JKN, people can spend less on hospital care costs.

SUGGESTION

Implementation of a digital marketing mix is really needed by hospitals to be able to provide maximum service to patients in the era of National Health Insurance. One of the hospital business strategies as a means of promotion to market the hospital's health services to the wider community is a digital marketing strategy.

Recommended hospital marketing strategies that include digital aspects include media content marketing, collaboration transformation, expanding social media networks and optimizing patient services

REFERENCES

- Arismen, A., Sulistiadi, W., & Chalik, A. (2019). Marketing Mix Strategy for Health Services RSD Kol. Abundjani Bangko in the Era of National Health Insurance (JKN). *Indonesian Journal of Hospital Administration*, 5(2).
- Chendra, WJ, & Mulyanti, D. (2023). Theoretical Study: Private Hospital Health Service Promotion Strategy in the Era of Health Service Guarantee (JKN). *DIAGNOSIS: Journal of Health and Nursing Sciences*, 1(2), 58-64.
- Dysyandi, W., Sumaryono, W., Widyastuti, S., & Lesmana, H. (2019). Marketing Mix About Modern Pharmacy Concepts and Marketing Strategies. *JRB-Journal of Business Research*, 3(1), 1-8.
- Ekawati, S., & Andriani, H. (2022). Marketing mix strategy for health services at Yadika Pondok Bambu Hospital during the Covid-19 pandemic. *Hutama Medika Journal*, 3(02 January), 2073-2083.
- Lubis, AI (2022). The Influence of Doctor Service Quality and Physical Evidence on Inpatient Loyalty. *Literate Syntax; Indonesian Scientific Journal*, 7(1), 1. <https://doi.org/10.36418/syntaxliterate.v7i1.1859>
- Maretta, B. (2022). Literature Review The Influence of Health Service Quality on Patient Loyalty at Community Health Centers. *Public Health*, 3(6), 684–698.
- Muchtar, S., & Rachmat, Z. (2019). The Influence of Position Auctions, Leadership and Competency on the Performance of School Principals in Makassar City. *MOVERE Journal*, 1(1), 93–101.
- Pudjowati, J., Rochmawati, SW, Retnowati, N., Rahmawati, FY, Balafif, M., & Syamsudin, A. (2021). Analysis of Marketing Strategies for Health Services in the Era of National Health Insurance at the Surabaya Lung Hospital. *Creative Research Management Journal*, 4(1), 11-21.
- Rizma, DA, & Budhiarta, I. (2019). Analysis of Marketing Strategy Implementation at Meuraxa Hospital Banda Aceh. *Journal of Economic Science*, 5(2), 84–89.
- Rostana, F.S. (2016). The Influence of Marketing Mix on Patients' Decisions to Seek Treatment at Roemani Muhammadiyah Hospital Semarang.
- Solechan, S. (2019). Social Security Administering Body (BPJS) Health as a Public Service. *Administrative Law and Governance Journal*, 2(4), 686-696.
- Sira, SA, & Junadi, P. (2023). SCOPING REVIEW: BASIS FOR DEVELOPMENT OF FIRST LEVEL HEALTH FACILITIES INTO A HOSPITAL. *Tambusai Health Journal*, 4(4), 5865-5875.
- Sutedjo, ES (2022). ANALYSIS OF HOSPITAL MARKETING STRATEGY PLANS IN AN EFFORT TO INCREASE OUTPATIENT VISITS OF NY'S KIDNEY SPECIAL HOSPITAL. RA HABIBIE. Doctoral dissertation, GRADUATE LIBRARY.

DIETARY BEHAVIOR AND HISTORY OF NAUSEA AND VOMITING WITH PREGNANCY ANEMIA

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ABSTRAK: PRILAKU KONSUMSI MAKAN DAN RIWAYAT MUAL MUNTAH DENGAN ANEMIA KEHAMILAN

Latarbelakang: Prilaku kebiasaan konsumsi makan yang kurang baik tidak dapat memenuhi kebutuhan angka kecukupan gizi. Jumlah konsumsi makan dan jenis makan yang tidak sesuai gizi seimbang dapat berakibat gizi kurang, defisiensi zat besi dan kekurangan zat besi pada makanan. Mual muntah kehamilan memperburuk asupan nutrisi dan rawan beresiko terjadi anemia defisiensi zat besi. Tujuan penelitian untuk mengetahui factor prilaku konsumsi makan dan riwayat mual muntah dengan anemia kehamilan.

Metode: Penelitian ini menggunakan desain Analitik Uji Lamda dengan rancangan cross sectional untuk mengetahui hubungan variable independen dengan dependen. Populasi berjumlah 40 orang. Teknik sampling: total sampling. Instrumen kuesioner data jumlah makan, data jenis makan dan riwayat mual muntah diperoleh dari wawancara. Data anemia diperoleh dari buku KIA hasil pemeriksaan hemoglobin

Hasil::Prilaku kebiasaan konsumsi jumlah makan ibu hamil ≤ 2 kali sehari terdapat anemia sedang 6 orang (600%), dan anemia berat 2 orang (100%). Prilaku konsumsi gizi tidak seimbang mengalami anemia berat 2 orang (100%), anemia sedang 10 orang (100%), anemia ringan 6 orang (75%)

Kesimpulan::tidak ada hubungan jumlah konsumsi makan dengan anemia, ada hubungan jenis konsumsi makan gizi seimbang dengan anemia dan ada hubungan mual muntah dengan anemia pada kehamilan.

Saran: Prilaku kebiasaan jumlah konsumsi makan yang cukup dan jenis makan gizi seimbang dapat mencegah terjadinya mual muntah berlebih dan anemia pada kehamilan.

Kata Kunci: Jumlah Makan, Jenis Makan, Mual Muntah, Ibu Hamil

ABSTRACT

Introduction: Suboptimal dietary practices can lead to a failure in meeting the necessary nutritional demands. Insufficient food consumption and the intake of nutritionally imbalanced meals can culminate in malnutrition, iron deficiency, and a scarcity of iron in one's diet. Pregnancy-induced nausea and vomiting can further deteriorate nutritional intake, thereby escalating the risk of iron deficiency anemia. The objective of this research is to discern the association between dietary behavior and a history of nausea and vomiting in relation to anemia during pregnancy.

Methodology: This research employs an Analytical Lambda Test design with a cross-sectional framework to ascertain the relationship between independent and dependent variables. The study population comprises 40 individuals. A total sampling technique was utilized. Data pertaining to meal frequency, types of meals, and a history of nausea and vomiting were gathered through questionnaires. Anemia data were extracted from the KIA book's hemoglobin examination results.

Findings: Pregnant women who consume meals ≤ 2 times per day exhibit moderate anemia in 6 individuals (600%), and severe anemia in 2 individuals (100%). Those with unbalanced nutritional consumption experience severe anemia in 2 individuals (100%), moderate anemia in 10 individuals (100%), and mild anemia in 6 individuals (75%).

Conclusion: There is no discernible correlation between meal frequency and anemia. However, a correlation does exist between the consumption of nutritionally balanced meals and anemia, as well as between nausea and vomiting and anemia during pregnancy.

Recommendation: Sufficient meal frequency and the consumption of nutritionally balanced meals can mitigate excessive nausea and vomiting, and prevent anemia during pregnancy.

Keywords: Meal Frequency, Type of Meal, Nausea and Vomiting, Pregnant Women

INTRODUCTION

Pregnancy anemia is a medical condition characterized by a reduction in the concentration of red blood cells (hemoglobin) within the bloodstream. A deficiency in erythrocytes can lead to an insufficient oxygen-carrying capacity, failing to meet the physiological needs of the body. Anemia is diagnosed when the hemoglobin concentration in the blood is ≤ 11 g/dL during the first and third trimesters of pregnancy, and a hemoglobin concentration of ≤ 10.5 g/dL during the second trimester (Vera Dwi Yanti, Nia Risa Dewi, 2023).

The prevalence of iron deficiency anemia in developed nations is approximately 18%, with an average range of 63%-80%. In contrast, the prevalence in developing nations is around 30%. The incidence of anemia among pregnant women in Indonesia remained relatively high in 2021, at 24.5%, with maternal mortality due to iron deficiency anemia accounting for 40% of cases. National health research indicates that the incidence of anemia among pregnant women has risen by 11.8% over a five-year period, increasing from 37.5% in 2017 to 48.9% in 2022.

The primary cause of maternal mortality in Indonesia is hemorrhaging, one of the causes of which is iron deficiency anemia (Lia Yuliani*, Atikah Adyas, 2023). Factors influencing anemia include dietary habits, where a deficiency in nutrient intake containing iron, the presence of reabsorption disorders, and iron utilization disorders can result in: 1) loss of erythrocytes due to hemorrhaging, 2) decreased production of red blood cells due to deficiencies in folic acid, vitamin B12, and iron, and 3) damage to red blood cells. Red blood cells are produced by the bone marrow and distributed throughout the body (Ernawati. W et al., 2023).

Anemia in developing countries is often attributed to nutritional deficiencies, including iron, folic acid, and vitamins. Pregnant women constitute one of the risk groups for anemia. Common symptoms of anemia, such as nausea and vomiting experienced by pregnant women from early pregnancy, can decrease appetite and lead to iron deficiency anemia (Kumar et al., 2022). Symptoms of anemia often do not manifest unless the decrease in hemoglobin reaches 7 g/dL to 8 g/dL. Symptoms experienced by pregnant women may include dizziness, weakness, shortness of breath, worsening of congestive heart failure, tachycardia, and pale conjunctiva, thus necessitating an assessment of dietary behavior (Kementrian Kesehatan Indonesia, 2018).

Risk factors for anemia during pregnancy encompass five areas: 1) insufficient intake of nutrients containing iron, folic acid, and vitamin B12, 2) gestational diabetes, where there is an increase in fetal iron requirements due to hyperglycemia, 3) multiple pregnancies, 4) pregnant teenagers with a history of infectious diseases and genetic predispositions, 5) inflation and infection during pregnancy, such as HIV disease and tuberculosis (Martina Lenau, Eka Frenty Hardiningsih, Dwi Hartati, 2023).

Factors such as age, education, parity, gravidity, and diet are also associated with the occurrence of anemia during pregnancy (Pratiwi, Vita, 2019). Food intake determines the quality of nutrient absorption in the body, and eating patterns and frequency in meeting nutritional needs determine the health condition of pregnant women and fetuses (Nukita Febriyana Suryanti, Betanuari Sabda Nirwana, Putri Wahyu Wigati, 2022).

The recommended dietary pattern during pregnancy is to eat as often as three times a day and regularly with a healthy and balanced diet menu. Iron-containing food intake is related to the incidence of pregnancy anemia (Junita et al., 2023). However, another opinion posits that nutritional status is not related to the occurrence of iron deficiency anemia (Utama, 2021).

The assessment of the nutrition of pregnant women is derived from weight gain and upper arm circumference. Normally, weight gain in the first trimester of pregnancy is about 1-2.5 kg per month, the second trimester is 0.35-0.4 kg per week, and the third trimester is about 1 kg per week (Aguscik & Ridwan, 2019). Weight monitoring is carried out every time a pregnant woman undergoes an examination to assess the nutritional status of the mother through body weight and upper arm circumference. Other factors such as parity, pregnancy distance, antenatal care visits, and consumption of Fe tablets can also affect anemia during pregnancy (Novi Febriani, Sabtian Sarwoko, 2022).

Malnutrition during pregnancy is at risk of complications of iron anemia, pre-eclampsia, bleeding, infection, and other diseases. Food intake is a major factor in the occurrence of iron deficiency anemia, so that the concentration of hemoglobin in the blood decreases and the formation of red blood cells decreases, which will further exacerbate anemia. Pregnant women with thin nutritional status are at risk of 3.1 times anemia compared to (Martina Lenau, Eka Frenty Hardiningsih, Dwi Hartati, 2023).

The impact of pregnant women with anemia is at risk of complications in the fetus and in the mother, including complications in the fetus born prematurely, growth disorders and developmental disorders, low birth weight babies anemia in mothers can occur postpartum bleeding (Wulandari et al., 2021). Cesarean section delivery due to anemia indications (Anjas Dwi Purwanto, 2016).

A preliminary study was conducted at the Nelayan Public Health Center, Gresik Regency, from January to April 2024, a total of 10 pregnant women, namely 5 people in the first trimester, 3 people in the second trimester and 2 people in the third trimester. Information was obtained about nutrient consumption saying that eating patterns were irregular every day.

From this background, research was conducted on the factors of behavior and nausea and vomiting with pregnancy anemia to find the theoretical concept of pregnant women's behavior, the theoretical concept of nausea and vomiting and the theoretical concept of anemia with the specific aim of 1) Identifying the behavior of pregnant women's eating habits, 2) Identifying the behavior of pregnant women's eating habits, 3) Identifying a history of nausea and vomiting during pregnancy, 4) identifying pregnancy anemia, 5) Knowing the relationship between eating habits and a history of nausea and vomiting with pregnancy anemia.

RESEARCH METHODS

The research methodology incorporates an Analytical Lambda approach, utilizing a cross-sectional design to ascertain the correlation between independent and dependent variables. This investigation was executed over the period of February to March 2024. The study population comprised all pregnant women, amounting to a total of 40 individuals. A comprehensive sampling technique was employed for this study. Data pertaining to dietary habits were procured through interviews, which included six statements concerning daily meal frequency. Information regarding the types of meals consumed by pregnant women was gathered through interviews, encompassing eight statements about balanced nutrition. Data relating to the history of nausea and vomiting were obtained through direct interviews. Anemia data were extracted from the results of hemoglobin examinations documented in the KIA book.

RESEARCH RESULTS

**Tabel 1.
Total Sum od Diet * Anemia**

Total Diet	Anemia				Total
	No Anemia	Mild Anemia	Moderate Anemia	Severe Anemia	
≤ 2 times per day	0 0%	0 0%	6 60%	2 100%	8 20%
2-3 times per day	7 35%	8 100%	4 40%	0 0%	19 47.5%
≥ 3 times per day	13 65%	0 0%	0 0%	0 0%	13 32.5%

Table 1. It is known that severe anemia in pregnant women who consume meals ≤ 2 times a day is found in 2 individuals (100%), moderate anemia in those who consume meals ≤ 2 times a day is found in 6 individuals (60%), and mild anemia in those who consume meals 2-3 times a day is found in 8 individuals (100%). From the Lambda Statistical Test analysis, a p-value of $0.45 \geq 0.5$ was obtained, indicating that there is no correlation between meal frequency and anemia in pregnant women.

**Table 2.
Data on Type of Meal * Anemia**

Type of Male	Anemia				Total
	No Anemia	Mild Anemia	Moderate Anemia	Severe Anemia	
Unbalanced nutrition	0 0%	6 75%	10 100%	2 100%	18 45.5%
Balance nutrition	20 100%	2 25%	0 0%	0 0%	22 55%

Table 2. It is observed that pregnant women with moderate anemia who consume unbalanced nutrition amount to 10 individuals (100%), severe anemia is found in 2 individuals (100%), and mild anemia is found in 6

individuals (75%). Meanwhile, pregnant women without anemia who consume balanced nutrition amount to 20 individuals (100%).

From the Lambda Statistical Test analysis, a p-value of $0.000 \leq 0.5$ was obtained. This indicates that there is a correlation between the consumption of balanced nutritional meals and anemia during pregnancy.

Table 3.
Data on Nausea_Vomiting* Anemia Crosstabulation

Nausea	Anemia				Total
	No Anemia	Mild Anemia	Moderate Anemia	Severe Anemia	
No nausea	8 40%	0 0%	0 0%	0 0%	8 20%
Mild nausea	12 60%	3 37.5%	0 0%	0 0%	15 37.5%
Moderate nausea	0 0%	5 62.5%	9 90%	0 0%	14 35%
Severe nausea	0 0%	0 0%	1 10%	2 100%	3 7,3%

Table 3. It is observed that pregnant women with moderate anemia experiencing moderate nausea and vomiting amount to 9 individuals (90%) and severe nausea and vomiting in 1 individual (10%). Severe anemia is found in 2 individuals (100%) who experience severe nausea and vomiting. Moderate anemia is found in 5 individuals (62.5%) who experience mild nausea and vomiting, and mild anemia is found in 3 individuals (37.5%) who experience mild nausea and vomiting.

From the Lambda Statistical Test analysis, a p-value of $0.000 \leq 0.5$ was obtained, indicating that there is a correlation between nausea and vomiting and anemia during pregnancy.

DISCUSSION

Dietary Habits of Pregnant Women

Table 1. Observations indicate that pregnant women who typically consume meals ≤ 2 times a day experience severe anemia (100% of 2 individuals) and moderate anemia (60% of 6 individuals). Conversely, pregnant women who consume meals ≥ 3 times a day do not exhibit signs of anemia.

Sufficient dietary habits are crucial in meeting the escalated nutritional needs of pregnant women. However, eating habits should not only satiate but also fulfill the nutritional requirements essential for fetal growth and development. Eating habits are also correlated with anemia in pregnant women (Pratiwi, Vita, 2019). The portion or quantity of food consumed influences the nutritional value and iron content derived from food; insufficient food portions can lead to malnutrition (Hartati et al., 2023). According to another study, inadequate food intake is associated with malnutrition, leading to insufficient consumption of iron, protein, and vitamins found in food (Salma et al., 2023).

The research results yield a p-value of $0.45 \geq 0.5$, indicating no correlation between meal consumption and iron deficiency anemia. Prevention of anemia should commence from adolescence, with pregnant women consuming iron-rich foods, taking blood boosters during pregnancy and menstruation (do Amar(do Amaral E Melo et al., 2020).

This research reveals that the behavioral habit of consuming meals ≤ 2 times a day is associated with a risk of severe and moderate anemia during pregnancy. It underscores the importance of modifying behaviors by consuming sufficient meals to meet nutritional needs during pregnancy. Early pregnancy nausea and vomiting, one of the causes of decreased eating patterns in pregnant women, potentially risk causing anemia during pregnancy, which can impact complications in both the mother and baby, leading to causes of death.

Dietary Habits of Pregnant Women's Type of Meal Consumption

Table 2. Pregnant women with moderate anemia who consume unbalanced nutrition amount to 10 individuals (100%), severe anemia is found in 2 individuals (100%), and mild anemia is found in 6 individuals (75%). Meanwhile, pregnant women without anemia who consume balanced nutrition amount to 20 individuals (100%).

Eating frequency is related to nutritional status; less frequent eating during pregnancy can affect fetal growth and cause stunting in children (Herianto. & Rombi, 2016). Less frequent eating during pregnancy can result in low birth weight and premature babies (Utama, 2021). The leading cause of infant death is low birth weight at birth; eating frequency plays a significant role in the occurrence of low birth weight babies (Sri Wahyuni et al., 2021).

The Lambda Statistical Test analysis obtained a p-value of $0.000 \leq 0.5$, indicating a correlation between the consumption of balanced nutritional meals and anemia during pregnancy. This research found that the consumption of unbalanced nutritional meals causes severe and moderate anemia during pregnancy.

According to other research, pregnant women who consume less iron-rich food cause iron deficiency anemia, so the type of food consumed is related to the occurrence of anemia during pregnancy (Kadir, 2019). Unhealthy eating habits, with 91.7% experiencing anemia, are closely related to anemia during pregnancy (Pratiwi, Vita, 2019). Nausea and vomiting during pregnancy decrease appetite and reduce meal portions, potentially causing a lack of adequate nutrition during pregnancy. This is related to the occurrence of anemia (Nurjannah & Putri, 2021).

Prevention of anemia can be done by increasing pregnant women's knowledge about food consumption (Sukmawati et al., 2021). Prevention and handling of anemia by applying the principles of balanced nutrition include: 1) Consuming a variety of foods, 2) Adopting clean living behaviors, 3) Performing physical activities, 4) Regularly monitoring body weight (Kementrian Kesehatan Indonesia, 2018).

From this research, it is known that pregnant women who consume unbalanced nutrition experience severe and moderate levels of anemia. This shows a correlation between the type of food consumed and anemia in pregnant women. The purpose of balanced nutrition includes: supporting fetal growth and development, providing energy, and preventing complications such as anemia.

Nausea and Vomiting with Pregnancy Anemia

Table 3. It is observed that pregnant women with severe and moderate levels of nausea and vomiting experience severe and moderate anemia, respectively, and those with mild nausea and vomiting experience mild anemia. Meanwhile, pregnant women who do not experience nausea and vomiting do not experience anemia during pregnancy.

This research is consistent with previous findings that a lack of nutrient intake early in pregnancy due to symptoms of nausea and vomiting in early pregnancy, physical and psychological changes in the pregnancy process increase the nutritional needs of pregnant women, if not adequately met, are at risk of malnutrition, calorie energy deficiency (KEK) potentially less intake of iron, protein in food that is iron deficiency anemia (Mudlikah Siti, munisah, Yunita Nourma, B Ghurotul, Hariyani Ervin, 2022)

Nausea and vomiting are one of the determinants of the nutritional status of pregnant women (Mudlikah et al., 2022) Knowledge factor in food intake is related to the occurrence of anemia (Goreti et al., 2021). However, it differs from the opinion that the knowledge and attitude of pregnant women are not related to nausea and vomiting, so it is not related to anemia during pregnancy (Mudlikah & Ningrum, 2019).

It is known from the research results that a p-value of $0.000 \leq 0.5$ was obtained, indicating a correlation between nausea and vomiting and anemia during pregnancy. This research is reinforced by other research that anemia is related to the factor of nausea and vomiting and nutritional status in pregnant women (Sinaga, 2022).

Poor nutritional status causes pregnant women to experience protein deficiency quickly, resulting in gastric dysrhythmia that stimulates excessive nausea and vomiting (Nurbaity et al., 2019). Another statement is that pregnant women with poor nutritional status are at risk of 2.9 times anemia, but nutritional status plays a role of 4.7% (Utama, 2021). Anemia is not only influenced by nutritional status, several factors such as: knowledge, parity, age, education, occupation are characteristics related to the occurrence of anemia (Mahmudah, 2022).

Prevention and handling of anemia are not only done by increasing the number of meals, types of meals, and improving nutrition alone, but many factors need to be considered, including: consumption of blood-boosting tablets (Fe), physical activity, and regular antenatal care.

CONCLUSION

The behavioral habit of consuming meals ≤ 2 times a day is found in pregnant women who experience severe and moderate anemia. However, the research results show no correlation between meal consumption and anemia during pregnancy. Consumption of unbalanced nutritional meals is found in pregnant women with moderate and severe anemia, where there is a correlation between balanced nutrition and anemia. Pregnant women who experience moderate to severe levels of nausea and vomiting are found to have moderate and severe anemia, indicating a correlation between nausea and vomiting and anemia during pregnancy.

The eating habits of pregnant women can influence the quality and quantity of food, so balanced nutritional content in food is very important to meet the nutritional needs of pregnant women and the fetus.

REFERENCES

- Aguscik, A., & Ridwan, R. (2019). Pengaruh status gizi terhadap kejadian anemia pada ibu hamil di daerah endemik malaria kota bengkulu. *Jpp (jurnal kesehatan poltekkes palembang)*, 14(2), 96–99. <https://doi.org/10.36086/jpp.v14i2.417>
- Anjas Dwi Purwanto, c. U. W. (2016). Hubungan antara umur kehamilan, kehamilan ganda, hipertensi dan anemia dengan kejadian bayi berat lahir rendah (BBLR). *Jurnal berkala epidemiologi*, 4(3), 384–395. <https://doi.org/10.20473/jbe.v4i3>
- Do amaral E Melo, G. R., silva, P. O., Nakabayashi, J., Bandeira, M. V., Toral, N., & Monteiro, R. (2020). Family meal frequency and its association with food consumption and nutritional status in adolescents: a systematic review. *Plos one*, 15(9 september), 1–29. <https://doi.org/10.1371/journal.pone.0239274>
- Ernawati, W., Andarwati, D., Hanung, A., & Dhamayanti, R. (2023). Faktor-faktor yang mempengaruhi anemia pada ibu hamil. *Jurnal ilmiah multidisiplin*, 1 (no. 7)(7), 231–240.
- Goreti, P. M., Maria Helena Dua Nita, c. R. N., & S.Loaloka, M. (2021). Hubungan pengetahuan gizi dan status gizi dengan kejadian anemia pada remaja putri di kota kupang. *Politeknik kemenkes kupang*, 24–28.
- Hartati, Y., Wijaya, K., & Telisa, I. (2023). Gambaran besar porsi, asupan zat gizi terhadap status gizi mahasiswa di asrama. *Jurnal pusat akses kajian pangan dan gizi*, 2(3), 57–64.
- Herianto., & Rombi, M. (2016). Hubungan antara frekuensi makan dan kebiasaan makan dengan kejadian (stunting) di sdn 08 angata kabupaten konawe selatan. *Jurnal gizi ilmiah*, 3(2), 1–11.
- Junita, F., Wati, P. K., & Ulfah, R. (2023). Nutritional status with the incidence of anemia in students of Lspr jakarta institute of communication and business. *Jurnal ilmiah kesehatan sandi husada*, 12(2), 288–294. <https://doi.org/10.35816/jiskh.v12i2.994>
- Kadir, S. (2019). Faktor penyebab anemia defisiensi besi pada ibu hamil di wilayah kerja puskesmas bongo nol kabupaten boalemo. *Jambura journal of health sciences and research*, 1(2), 54–63. <https://doi.org/10.35971/jjhsr.v1i2.2396>
- Kementerian Kesehatan Indonesia. (2018). *Pedoman pencegahan dan penanggulangan anemia pada remaja putri dan wanita usia subur (wus)*.
- Kumar, A., Sharma, E., Marley, A., Samaan, M. A., & Brookes, M. J. (2022). Iron deficiency anaemia: pathophysiology, assessment, practical management. *Bmj open gastroenterology*, 9(1), 1–9. <https://doi.org/10.1136/bmjgast-2021-000759>
- Lia yuliani*, Atikah Adyas, D. R. (2023). Faktor-faktor yang berhubungan dengan kejadian abortus. *Jurnal kebidanan : jurnal ilmiah permas: jurnal ilmiah stikes kendal*, 13(3), 1108–1116. <https://doi.org/10.35325/kebidanan.v13i1.358>
- Mahmudah, N. (2022). Karakteristik ibu hamil dengan anemia di pmb istri utami. *Jkm (jurnal kesehatan masyarakat cendekia utama*, 9(2), 214. <https://doi.org/10.31596/jkm.v9i2.1030>
- Martina Lenau, Eka Frenty Hardiningsih, Dwi Hartati, C. S. (2023). Hubungan anemia pada kehamilan dengan kejadian perdarahan pasca bersalin dan bblr di rsud dr. Abdul rivai. *Ilmiah multi disiplin indonesia*, 2(5), 861–878.
- Mudlikah, S., Munisah, M., Yunita, N., B, G., Hariyani, E., & Salsabila, A. T. (2022). Peningkatan asupan nutrisi ibu hamil emesis gravidarum melalui dukungan suami/keluarga dan kenaikan berat badan ibu hamil. *Dedikasimu : journal of community service*, 4(3), 341. <https://doi.org/10.30587/dedikasimu.v4i3.4310>
- Mudlikah, S., & Ningrum, N. I. (2019). Hubungan pengetahuan dan sikap ibu hamil terhadap mual muntah kehamilan dengan waktu mual. *Jurnal kebidanan*, 5(april), 1–6.
- Mudlikah Siti, Munisah, Yunita Nourma, B Ghurotul, Hariyani Ervin, S. T. (2022). *Peningkatan asupan nutrisi ibu hamil emesis gravidarum melalui dukungan suami / keluarga dan kenaikan berat badan*. 4(september), 341–348.
- Novi Febriani, Sabtian Sarwoko, D. (2022). Faktor-faktor yang berhubungan dengan kejadian anemia pada ibu hamil. *Jurnal sains kesehatan*, 28(3), 20–30. <https://doi.org/10.37638/jsk.28.3.20-30>
- Nukita Febriyana Suryanti, Betanuari Sabda Nirwana, Putri Wahyu Wigati, H. S. (2022). *Hubungan ppengetahuan ibu hamil tentang ultrasonografi dalam pemeriksaan kehamilan dengan perilaku pemanfaatan ultrasonografi* (p. 4).
- Nurbaity, A. D., Candra, A., & Fitranti, D. Y. (2019). Faktor risiko hiperemesis gravidarum pada ibu hamil di semarang. *Journal of nutrition college*, 8(3), 123–130. <https://doi.org/10.14710/jnc.v8i3.25801>

- Nurjannah, S. N., & Putri, E. A. (2021). Hubungan status gizi dengan kejadian anemia pada remaja putri di smp negeri 2 garawangi kabupaten kuningan. *Journal of midwifery care*, 1(02), 125–131. <https://doi.org/10.34305/jmc.v1i02.266>
- Pratiwi, Vita, a. J. (2019). Hubungan pola makan dengan kejadian anemia pada ibu hamil di pmb bd d. Kel. Bojongsari kec. Bojongsari baru kota depok tahun. *Jurnal ilmiah bidan*, 3(1).
- Salma, A. N., Andriani, E., & Sabrina. (2023). Correlation between frequency of food consumption, protein intake and micronutrients with anemia in adolescent girls at sman 2 tambun selatan. *Jurnal kesehatan pasak bumi kalimantan*, 6(2), 2722–2753. <http://e-journals.unmul.ac.id/index.php/jkpbk>
- Sinaga, S. M. (2022). Hubungan anemia dalam kehamilan dengan kejadian perdarahan postpartum primer di rsud putri hijau medan periode januari 2020-januari 2021. *Jurnal maternitas kebidanan*, 7(1), 1–10. <https://doi.org/10.34012/jumkep.v7i1.2278>
- Sri Wahyuni, Yustina Ananti, & Chentia Misse Issabella. (2021). Hubungan anemia kehamilan dengan kejadian berat badan lahir rendah (bblr): systematic literatur review. *Journal of health (joh)*, 8(2), 94–104. <https://doi.org/10.30590/joh.v8n2.p94-104.2021>
- Sukmawati, S., Widiasih, R., Mamuroh, I., & Nurhakim, F. (2021). Anemia kehamilan dan faktor yang mempengaruhi: studi korelasi. *Jurnal kesehatan bakti tunas husada: jurnal ilmu-ilmu keperawatan, analisis kesehatan dan farmasi*, 21(1), 43. <https://doi.org/10.36465/jkbth.v21i1.679>
- Utama, R. P. (2021). Status gizi dengan kejadian anemia pada ibu hamil. *Jurnal ilmiah kesehatan sandi husada*, 10(2), 689–694. <https://doi.org/10.35816/jiskh.v10i2.680>
- Vera Dwi Yanti, Nia Risa Dewi, S. A. S. (2023). Penerapan pendidikan kesehatan tentang anemia untuk meningkatkan pengetahuan ibu hamil di wilayah kerja puskesmas purwosari metro tahun 2022 implementation. 3, 603–609.
- Wulandari, A. F., Sutrisminah, E., & Susiloningtyas, I. (2021). Literature review: dampak anemia defisiensi besi pada ibu hamil. *Jurnal ilmiah pannmed (pharmacist, analyst, nurse, nutrition, midwifery, environment, dentist)*, 16(3), 692–698. <https://doi.org/10.36911/pannmed.v16i3.1219>

EFFECTIVENESS OF CHAMOMILE TEA ON DYSMENORRHOEA PAIN SCALE IN ADOLESCENT GIRLS

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ABSTRAK : EFEKTIVITAS PEMBERIAN TEH *CHAMOMILE* TERHADAP SKALA NYERI DISMENORE PADA REMAJA PUTRI

Latar Belakang: Dismenore merupakan nyeri kram pada perut yang terjadi selama menstruasi. Di Indonesia angka kejadian dismenore sebesar 64,25 % yang terdiri dari 54,89% dismenore primer, sedangkan sisanya merupakan penderita tipe sekunder, yang mengakibatkan mereka tidak sanggup melakukan aktivitas apapun dan ini akan menurunkan kualitas hayati dalam individu masing-masing. Keluhan ini berdampak pada menurunnya produktivitas dan kualitas hidup perempuan, seperti ketidak hadiran di sekolah atau pekerjaan, pembatasan aktivitas, penurunan performa akademik, gangguan tidur dan gangguan mood.

Tujuan: Untuk mengetahui efektivitas pemberian teh *chamomile* terhadap skala nyeri dismenore pada remaja dengan dismenore primer di MTs Darunnajah 2 Cipining Bogor tahun 2024.

Metodologi: Desain penelitian ini menggunakan *quasi eksperiment* dengan pendekatan *with control group pre-test post-test*. Sampel dalam penelitian ini berjumlah 30 responden yang terdiri dari 15 responden intervensi dan 15 responden kontrol. Data dianalisis menggunakan uji *t (paired t test)*. Instrumen yang digunakan adalah lembar observasi.

Hasil Penelitian: Analisis univariat pada kelompok intervensi diperoleh nilai rata-rata pretest sebesar 5,47 dan posttest sebesar 2,93. Sedangkan pada kelompok kontrol diperoleh nilai rata-rata pretest sebesar 4,67 dan posttest sebesar 4,20. Hasil uji *t paired t test* dengan nilai signifikansi *P-Value* 0.000 yang berarti ada pengaruh teh *chamomile* terhadap penurunan dismenore pada remaja

Simpulan : Teh *chamomile* efektif dalam menurunkan skala nyeri dismenore pada remaja di MTs Darunnajah 2 Cipining Bogor Tahun 2024.

Saran: *chamomile* dapat digunakan sebagai pengobatan dismenore secara non – farmakologis sehingga masyarakat bisa membudidayakan untuk menanam tanaman teh *chamomile* ini mengingat khasiat yang dimiliki.

Kata kunci : *Chamomile*, Dismenore, Menstruasi, Remaja.

ABSTRACT

Background: Dysmenorrhoea is a cramping pain in the abdomen that occurs during menstruation. In Indonesia, the incidence of dysmenorrhoea is 64.25% which consists of 54.89% primary dysmenorrhoea, while the rest are secondary type sufferers, which results in them not being able to do any activities and this will reduce the quality of life in each individual. This complaint has an impact on reducing women's productivity and quality of life, such as school or work absences, activity restrictions, decreased academic performance, sleep disturbances and mood disorders.

Objective: To determine the effectiveness of chamomile tea administration on dysmenorrhoea pain scale in adolescents with primary dysmenorrhoea at MTs Darunnajah 2 Cipining Bogor in 2024.

Methodology: This research design uses a quasi-experiment with a control group pre-test post-test approach. The sample in this study amounted to 30 respondents consisting of 15 intervention respondents and 15 control respondents. Data were analysed using paired t test. The instrument used was an observation sheet.

Research Results: Univariate analysis in the intervention group obtained an average pretest value of 5.47 and posttest of 2.93. While in the control group the average pretest value was 4.67 and the posttest was 4.20. The results of the paired t test with a significance value of *P-Value* 0.000 which means that there is an effect of chamomile tea on reducing dysmenorrhoea in adolescents.

Conclusion: Chamomile tea is effective in reducing dysmenorrhoea pain scale in adolescents at MTs Darunnajah 2 Cipining Bogor Year 2024.

Suggestion: Chamomile can be used as a non-pharmacological treatment of dysmenorrhoea so that people can cultivate to plant this chamomile tea plant given its properties.

Keywords: Adolescent., Chamomile, Dysmenorrhoea, Menstruation

INTRODUCTION

In Indonesia, the incidence of dysmenorrhoea is 64.25% which consists of 54.89% primary dysmenorrhoea, while the rest are secondary type sufferers, which results in them not being able to do any activities and this will reduce the quality of life in each individual. The incidence of dysmenorrhoea ranges from 40-80% and 20-25% of women experience severe to unbearable dysmenorrhoea. Adolescents with severe dysmenorrhoea receive low grades (7.5%), decreased concentration (87.1%) and absence from school (80.6%). (Kemenkes RI, 2019).

In West Java, 51.86% of women experienced dysmenorrhoea. Women who experienced dysmenorrhoea, consisting of 21.8% mild dysmenorrhoea, 19.34% moderate dysmenorrhoea and 10.72% severe dysmenorrhoea. (Marisa et al., 2022). And in the Bogor area the incidence of primary dysmenorrhoea reached 88.4%. (Tristiana, 2019)

The impact of primary dysmenorrhoea causes several problems, including 76.6% of students not attending school due to menstrual pain and 6% of students experiencing a decrease in learning achievement. Primary dysmenorrhoea in adolescents must be treated with appropriate measures to avoid negative impacts that will arise. (Dhilon, 2020)

Many efforts are made to reduce the intensity of dysmenorrhoea pain, namely by taking pain management nursing actions. This pain management action consists of pharmacological and non-pharmacological pain management. Pharmacological action is by administering analgesic drugs to reduce pain, while non-pharmacological actions include warm compresses and drinking herbs or other things. (Widya nthi et al., 2021)

One way to reduce menstrual pain is to consume Chamomile tea. Chamomile is a medicinal plant that has a flower structure similar to daisies, with a yellow core and white florets. Chamomile belongs to the Asteraceae group. Chamomile tea contains essential oils and flavonoids that can inhibit the enzyme cyclooxygenase, which will reduce prostaglandin, thereby reducing pain. And glycine is effective in relieving dysmenorrhoea pain. Chamomile tea is usually made from dried leaves and chamomile flowers. Chamomile tea can be consumed directly or compressed on the affected abdomen. (Crystallography, 2018)

In a study conducted by Mollabashi et al., 2021 stated that chamomile was more effective than placebo in reducing menstrual-related mood disorders ($p < 0.001$). Flavonoids, one of the most

important compounds in chamomile, increase progesterone levels through its direct effect on the pituitary gland, so this plant can be effective in modulating premenstrual mood symptoms, also, the calming and anti-anxiety effects of chamomile are due to the presence of compounds such as camazoline and flavonoids in this case the chamomile plant can be useful and provide the effect of relieving premenstrual mood symptoms. (Najafi Mollabashi et al., 2021)

Camomile flowers (*Matricaria chamomilia* L.) are widely used in traditional medicine for their flavonoids, coumarins, essential oils, terpenes, sterols, organic acids and polysaccharides. With different groups of compounds in it, this chamomile flower has the potential to have different uses in treatment with herbal plants that can potentially reduce side effects due to pharmacotherapy with soporific drugs (sleep-inducing drugs) Apigenin compounds in chamomile flowers have a function similar to benzodiazepine, namely as a GABA (gamma aminobutyric acid) receptor binder to relax muscles and stimulate drowsiness, thus improving sleep quality. (Aisah Dwi et al, 2023)

In a study conducted by Yuliana Feli Tri et al, 2022 found that there was a decrease in the primary dysmenorrhoea pain scale from before the intervention obtained results with a total of 11 respondents (50%) who fell into the mild pain category and 11 respondents (50%) who fell into the moderate pain category. After the intervention, results were obtained with 5 respondents (22.73%) falling into the no pain category and 17 respondents (77.23%). In this study there was an effect of giving chamomile tea on reducing the pain scale with a p-value of 0.000, therefore the p-value is < 0.05 . This shows that there is an effect of giving chamomile tea on reducing the pain scale of primary dysmenorrhoea.

Of the students at MTs Darunnajah 2 Cipining Bogor met by the researchers, the students did not know about the use of herbs with chamomile tea, those who experienced dysmenorrhoea/ menstrual pain would take painkillers, compress with warm water, rest/sleep and some overcame it by applying warm oil. There were no schoolgirls who overcame menstrual pain by consuming herbs that they had made themselves or that had been provided by school health centres or hostels.

Based on this background, the researcher aims to conduct a study to find out "whether the administration of chamomile tea is effective on the dysmenorrhoea pain scale in adolescents at MTs Darunnajah 2 Ciping Bogor year 2024".

RESEARCH METHODS

This research is a type of quantitative research with a research design using a quasi-experiment with a control group pre-test post-test approach. The parallel design is used to compare between 2 independent groups (group comparison), namely the control group and the intervention group. In this study there were two groups of respondents, the control group and the intervention group. The intervention group was given chamomile tea and the control group was not given chamomile tea.

The population used in this study were female students at MTs darunnajah 2 cipining Bogor consisting of 6 classes with information on the total population of female students at MTs, namely 204 students. The research sampling technique using purposive sampling technique. The number of samples obtained was 30 respondents with the division of the intervention group of 15 respondents and the control group of 15 respondents. Researchers conducted an approach and introduction, approval

Respondents and measurement of dysmenorrhoea pain scale (pretest) then respondents were given chamomile tea as much as 24 grams per a tea bag for a drink and drunk for 2 days, and on the 3rd day the measurement of dysmenorrhoea pain scale (posttest).

The instrument used in this study was an observation sheet (pretest and posttest). Indicator or sign to be measured skala nyeri dismenore yaitu menggunakan skala Numeric Rating Scale (NRS) 1 - 10 with information 0: no complaints of pain, no pain. 1-3: pain begins and is tolerable, mild pain. 4-6: pain that is bothersome and requires effort to endure, moderate pain. 7-10: pain is very distressing and unbearable, grimacing, screaming and even shouting, severe pain.

Univariate analysis was performed to determine the mean value of the pretest and posttest dysmenorrhoea pain scale. Bivariate analysis was performed to determine the effect of chamomile tea on dysmenorrhoea in adolescents using paired t-test.

RESEARCH RESULTS

Univariate Analysis

Table 1

Dysmenorrhoea Pain Scale mean scores before and after in intervention and control groups.

Group	n	Min	Max	Mean	SD
Intervention					
Pre test	15	2	10	5.47	2.475
Post Test		0	5	2.93	1.624
Control					
Pre Test	15	1	9	4.67	2.257
Post Test		1	8	4.20	2.042

Based on Table 1, it can be seen that in the intervention group, the mean value of the pain scale before the administration of chamomile tea is 5.47, while the mean value of the dysmenorrhoea pain scale after the administration of chamomile tea is 2.93, which means that there is a difference in the mean value of the reduction of dysmenorrhoea pain in adolescents after the administration of chamomile tea.

In the control group, the pre-test Dysmenorrhoea Pain Scale score was 4.67 and the post-test Dysmenorrhoea Pain Scale score was 4.20, which means that there was a difference of 0.47 in the average score of reduction in dysmenorrhoea pain in teenagers.

Bivariate Analysis

Based on Table 2 shows that in the intervention group there is a difference in the mean value of the dysmenorrhoea pain scale with a sig value of 0.000 < 0.05, which means that there is an effect of giving chamomile tea in reducing dysmenorrhoea pain.

In the control group, there is a difference in the mean value of the dysmenorrhoea pain scale with a sig value of 0.004 < 0.05, which means that there is an effect of the control group not receiving any treatment in reducing the dysmenorrhoea pain scale.

Table 2
Differences in Dysmenorrhoea Pain Scale Pre Test and Post Test in Intervention and Control Groups

Group	N	Mean	SD	t	Sig. (2-tailed)
Pre Intervention	15	2.533	1.302	7.536	.000
Test Control					
Post intervention	15	0.467	0.516	3.500	.004
Test Control					

Table 3
The effect of chamomile tea on the reduction of dysmenorrhoea

Group	n	Mean	SD	Mean Difference	Sig (2 tailed)
Intervention	15	2.93	1.62422	-1.26667	0.000
Control	15	4.20	2.04241		

Table 3 shows that there is a difference in the mean value between the intervention group and the control group with a sig value (2-tailed) 0.00, which means that there is a significant difference in the mean value of the dysmenorrhoea pain scale in the intervention group compared to the mean value of the pain scale in the control group with a difference in the mean value of the dimenorrhoea pain scale of -1.26667, meaning that the intervention group has a lower pain scale after being given chamomile tea, it can be concluded that giving chamomile tea is more significant in reducing dysmenorrhoea pain.

DISCUSSION

Based on the results of the study in the intervention group, the mean value of the pretest dysmenorrhoea pain scale was 5.47 and the mean value of the posttest dysmenorrhoea pain scale was 2.93, which means that there was a significant decrease in the mean value of the dysmenorrhoea pain scale after the administration of chamomile tea.

In the control group, the mean pretest dysmenorrhoea pain scale score was 4.67 and the mean posttest dysmenorrhoea pain scale score was 4.20, meaning that there was a significant decrease in the mean dysmenorrhoea pain scale score in the control group.

Research conducted by Putri Nur Fauziah (2019) on the review of effective plants to overcome dysmenorrhoea, based on the journal, where one of them is chamomile tea, it was reviewed that the reduction of the intensity of dysmenorrhoea pain using herbal plants has resulted in the reduction of pain intensity in the first 24 hours after drinking the herbal plant.

A study conducted by Elham Najafi (2017) at Guilan University of Medical Sciences. Participants were divided into two groups: chamomile and placebo. From this study, it was found that chamomile capsules were more effective than placebo in reducing the dysmenorrhoea pain scale experienced by the participants. From the two research journals, it can be concluded that there was a reduction in the pain scale after the intervention, which shows that the respondents actually intervened where during the trial the respondents only used non-pharmacological therapy, namely drinking chamomile tea, which was given as a pain-relieving therapy.

Chamomile contains apigenin compounds, which are compounds that can relieve menstrual pain by relaxing tense uterine muscles. chamomile has anti-spasmodic properties, which can relieve dysmenorrhoea.

From the research data above, according to the researcher, there was a decrease in menstrual pain (dysmenorrhoea) after the intervention, which shows that the respondents carried out the intervention seriously, whereas during the research the respondents only carried out non-pharmacological therapy, namely by drinking chamomile tea, which was given as a therapy to treat dysmenorrhoea.

Effect of chamomile tea on dysmenorrhoea

Based on the results of the study, there was a difference in the pain scale between before and after giving chamomile tea, which means that there was an effect of giving chamomile tea on reducing the dysmenorrhoea pain scale, but the reduction in the dysmenorrhoea pain scale was more significant in the intervention group than in the control group.

The exact cause of primary dysmenorrhoea is still unknown (idiopathic), but several factors have been suggested as triggers of menstrual pain, including: psychological factors: adult women who are emotionally unstable are more likely to experience dysmenorrhoea. Endocrine factors: the onset of menstrual pain is thought to be due to excessive uterine contractions. Prostaglandin factor: This theory states that menstrual pain is caused by increased production of prostaglandins (by the uterine wall) during menstruation. This assumption underlies treatment with antiprostaglandins to relieve menstrual pain (Atikah, 2009).

Primary dysmenorrhoea is caused by natural chemicals produced by the cells in the lining of the womb called prostaglandins. Prostaglandins stimulate the smooth muscles of the uterine wall to contract. The higher the level of prostaglandins, the stronger the contraction and the more pain you will feel. Prostaglandin levels are usually very high on the first day of your period. On the second and subsequent days, the lining of the womb starts to shed and the prostaglandin levels fall. Menstrual pain and soreness will also decrease as prostaglandin levels fall.

According to research by Cicilia (2013), primary dysmenorrhoea is most common in

adolescents who have a menstrual period of 3 to 7 days, which is 69.7%. A study by Puspitsari, et al (2008) also showed a similar thing, namely that 70.2% of the incidence of dysmenorrhoea was experienced by adolescents who had a menstrual period of 3-7 days, this was due to the decay of endometrial tissue..

According to a study published in the Iranian Journal of Obstetrics, Gynaecology and Infertility, this flowery-scented tea can help reduce menstrual pain that is not caused by disease. Chamomile tea was studied because it contains a compound called hippurate. Hippurate is originally a natural compound in the body that fights inflammation. This anti-inflammatory compound may help to reduce the production of prostaglandins, thereby relieving menstrual pain.

From the description of the test results of the data above, it is consistent with a study (Khalesi et al, 2019) showing that chamomile tea is effective in the treatment of dysmenorrhoea. The study was a double-blind, randomised clinical trial. It was given to students living in the dormitory of Guilan University of Medical Sciences in 2017, who were suffering from moderate to severe dysmenorrhoea. The study was divided into 2 groups, namely the chamomile group, which received 250 mg of chamomile powder, and the placebo group, which received placebo tablets. The results after treatment showed that the perceived dysmenorrhoea pain scale decreased significantly in both groups. However, chamomile was more effective than placebo tablets in reducing the pain scale and the severity of physical and psychological symptoms in patients with dysmenorrhoea.

Another study was conducted by Khalesi, (2019) using a literature review using 8 research journals conducted from 2011 to 2018 using chamomile in capsules, extracts and tea dictapatham the results of the 8 research journals chamomile tea can reduce the dysmenorrhoea pain scale using a comparison that is placebo and mefenamic acid.

A compound found in chamomile called apigenin helps reduce the effects of neurotransmitters and excitatory hormones on the mind and body, and helps calm an overactive sympathetic nervous system. Chamomile also works to reduce the sensation of pain by inhibiting the COX enzyme. COX inhibition can provide relief from inflammation and pain symptoms. Another ingredient in chamomile tea is flavonoids, one of the main compounds in chamomile, which increases progesterone levels by acting directly on the pituitary gland, so it can be effective in modulating premenstrual mood symptoms. Chamomile has been used to treat dysmenorrhoea due to its therapeutic properties such as anti-inflammatory, antispasmodic,

antihistamine and anti-anxiety effects according to the ingredients described above. (Miguel, 2018)

From the description above, researchers believe that chamomile tea is quite effective in reducing the dysmenorrhoea pain scale because the content of chamomile tea is a substance that can reduce dysmenorrhoea pain. In addition, there have been several studies showing that chamomile is indeed effective in reducing dysmenorrhoea pain..

CONCLUSIONS

There is an effect in both the intervention and control groups in reducing the dysmenorrhoea pain scale, but the provision of chamomile tea is more significant in reducing dysmenorrhoea pain than in the control group who received no treatment.

SUGGESTION

There is a need to improve adolescent reproductive health services by informing adolescents about the use of chamomile tea as a non-pharmacological method that can be used for menstrual pain (dysmenorrhoea).

REFERENCES

- Anggarani, R. (2019). Kesiapan Menghadapi Menarche Pada Remaja Putri Di Sd Muhammadiyah Mlangi Gamping Sleman. *Journal of Chemical Information and Modeling*, 11–23.
- Astuti. (2018). *Penanganan Nyeri Haid (Dismenore)*.
- Bahrudin, M. (2018). Patofisiologi Nyeri (Pain). *Saintika Medika*, 13(1), 7.
- Batubara, J. R. (2018). Adolescent Development (Perkembangan Remaja). *Sari Pediatri*, 12(1), 21.
- Crystallography, X. D. (2018). *dismenore pada remaja*. 1–23.
- Dinda. (2020). *Hubungan Antara Usia Menarche Dengan Perilaku Kebersihan Mestruasi*. 11, 9–26.
- Durmaz, B. (2018). Validity and Reliability of Geriatric Depression Scale - 15 (Short Form) in Turkish older adults. In *Northern Clinics of Istanbul*.
- Eni. (2020). Hubungan Tingkat Stres Dengan Siklus Menstruasi Pada Mahasiswa Tingkat Akhir Di Stikes Elisabeth Medan. *Angewandte Chemie International Edition*, 6(11), 951–952., Mi, 5–24.
- Gao, Z., Lu, et al. (2019). Emergence and development of Uyghur medicine from the perspective of Chinese traditional medicine. *Traditional Medicine and Modern Medicine*, 02(04), 139–154.
- Hafizh Pane, M., Rahman, A. O., & Ayudia, E. I. (2021). Gambaran Penggunaan Obat Herbal Pada Masyarakat Indonesia Dan Interaksinya Terhadap Obat Konvensional Tahun 2020.

- Joms*, Vol 1, NO. 1, 40–62.
- Itani, R., Soubra, L., Karout, S., Rahme, D., Karout, L., & Khojah, H. M. J. (2022). Primary Dysmenorrhea: Pathophysiology, Diagnosis, and Treatment Updates. *Korean Journal of Family Medicine*, 43(2), 101–108.
- Izzaty, R. E., Astuti, B., & Cholimah, N. (2018). Mudah Menyusun SOP (Standard Operating Procedure). *Angewandte Chemie International Edition*, 6(11), 951–952., 4, 5–24.
- Kemenkes RI. (2019). Gambaran Tingkat Keparahan Disminore Primer. *Disminore (Nyeri Haid)*.
- Khalesi, Z. B., Beiranvand, S. P., & Bokaie, M. (2019). Efficacy of chamomile in the treatment of premenstrual syndrome: A systematic review. *Journal of Pharmacopuncture*, 22(4), 204–209.
- Lambara Putra, I., & Septa, T. (2018). Efek Pemberian Teh Chamomile (*Matricaria recutita*) Terhadap Pasien GAD (Generalized Anxiety Disorders). *Jurnal Majority*, 7(3), 296–300.
- Machsun, T. (2018). Pengaruh Teknik Relaksasi Nafas Dalam Dengan Meniup Balingbaling Terhadap Skala Nyeri Fungsi Vena Pada Anak Usia Prasekolah di Rumah Sakit Roemani Muhammadiyah Semarang. *Universitas Muhammadiyah Semarang*, 1–14.
- Mastaida Tambun, & Martaulina Sinaga. (2022). Pengaruh Kompres Hangat Terhadap Disminore saat Menstruasi pada Siswa Puteri Klas XI SMK N. 8. *SEHATMAS: Jurnal Ilmiah Kesehatan Masyarakat*, 1(3), 363–372.
- Miguel, F. G., Cavalheiro, A. et al, (2018). Validation of a RP-HPLC-DAD method for chamomile (*Matricaria recutita*) preparations and assessment of the marker, apigenin-7-glucoside, safety and anti-inflammatory effect. *Evidence-Based Complementary and Alternative Medicine*.
- Mulyati. (2022). *Analisis Penatalaksanaan DisminorePrimer pada Remaja Putri dengan Penggunaan Terapi Teh Herbal ChamomileDisalah Satu Sekolah Menengah di Bandung. Vol. 23 No.*
- Mulyati, I., Lestari, S., & Yuliani, M. (2022). Analisis Penatalaksanaan Disminore Primer pada Remaja Putri dengan Penggunaan Terapi Teh Herbal Chamomile Disalah Satu Sekolah Menengah di Bandung. *Buletin Poltanesa*, 23(2), 608–613.
- Najafi Mollabashi E, Ziaie I, Bostani Khalesi Z. The Effect Of *Matricaria Chamomile* On Menstrual Related Mood Disorders. *Eur J Obstet Gynecol Reprod Biol X*. 2021;12.
- Nur Fadhilah, D., Sitorus, B., Rudi Aman Manik, T., & Siburian, E. (2022). Uji Aktivitas Antioksidan Pada Teh Chamomile Kemasan Berdasarkan Variasi Suhu dan lama Penyeduhan Dengan Metode DPPH (1,1-diphenyl-2-picrylhydrazyl). *Jurnal TEKESNOS*, 4(1), 350–357.
- Puspa Devi, P., Umiana Soleha, T., Trijayanthi Utama, W., & Konsumsi Teh Chamomile untuk Mengurangi Kesulitan Tidur, E. (2021). Efektivitas Konsumsi Teh Chamomile Untuk Mengurangi Kesulitan Tidur (Insomnia). *Jurnal Agromedicine*, 8(2).
- Putri, R. D., Yantina, Y., & Suprihatin. (2018). Aroma Terapi Chamomile Menurunkan Skala Nyeri Pada Ibu yang Mengalami Luka Episiotomi di Praktik Mandiri Bidan Ponirah Margorejo Metro Selatan Kota Metro. *Jurnal Citra Keperawatan EISSN : 2502-3454*, 6(2), 59–66.
- Rohdiana, D., & Al-ghifari, U. (2018). *Karakteristik dan Komponen Fungsionalnya Chamomile*.
- Sakila, A. (2018). Daya Hambat Ekstrak Bunga Chamomile (*Matricaria chamomile* L) terhadap Pertumbuhan *Staphylococcus aureus*. In *Universitas Jember*.
- Tristiana. (2019). Gambaran Pengetahuan dan Perilaku Remaja Putri Tentang Penanganan Disminore di SMA Negeri 9 Kota Bogor. *Journal Information*, 10(3), 1–16.
- Vermarina, N. (2022). Pengaruh Endorphin Massage Terhadap Intensitas Disminore Pada Mahasiswa Jurusan Keperawatan Poltekkes Kemenkes Yogyakarta. *Doctoral Dissertation, Poltekkes Kemenkes Yogyakarta*, 9–31.
- Wahyu Baskoro. (2018). Konsep Dasar Disminore Nyeri Haid. *Disminore*, 1(69), 5–24.
- Widyanthi, N. M., Resiyanthi, N. K. A., & Prihatiningsih, D. (2021). Gambaran Penanganan Disminorea Secara Non Farmakologi Pada Remaja Kelas X Di Sma Dwijendra Denpasar. *Jurnal Inovasi Penelitian*, 2(6), 1745–1756.

**FACTORS ASSOCIATED WITH INCOMPLETE ABORTION AT H.M. RYACUDU REGIONAL GENERAL
HOSPITAL OF KOTABUMI NORTH LAMPUNG REGENCY**

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**ABSTRAK : FAKTOR-FAKTOR YANG BERHUBUNGAN DENGAN KEJADIAN ABORTUS INKOMPLETUS DI
RSUD H.M. RYACUDU KOTABUMI KABUPATEN LAMPUNG UTARA**

Latar Belakang : Salah satu masalah kehamilan yang banyak terjadi yaitu abortus, dari 46 juta kelahiran pertahun didapatkan 20 juta kasus karena abortus. Abortus menyumbang angka sebesar 5% dari komplikasi kehamilan yang menyebabkan kematian ibu. Tujuan penelitian untuk mengetahui faktor-faktor yang berhubungan dengan kejadian Abortus Inkompletus di Rumah Sakit Umum Daerah H.M Ryacudu Kotabumi Kabupaten Lampung Utara tahun 2020-2022

Metode Penelitian : Jenis penelitian yang digunakan adalah rancangan *cross sectional*. Populasi penelitian ini adalah ibu-ibu hamil yang mengalami Abortus dan dirawat di ruang rawat inap Rumah Sakit H.M Ryacudu Kotabumi Lampung Utara tahun 2020 – 2022 yang berjumlah 167 orang. Sampel dalam penelitian ini berjumlah 167 orang. Variabel Independen Usia ibu, usia kehamilan, paritas dan riwayat abortus. Teknik sampling total *sampling* Analisa menggunakan uji *Chi Square*.

Hasil penelitian : Didapatkan Kejadian abotrus inkompleteus sebanyak 112 kasus (67,1%). Usia ibu hamil yang mengalami kejadian abotrus >35 tahun sebanyak 89 orang (53,3%). Usia kehamilan ibu hamil yang mengalami kejadian abotrus <12 minggu sebanyak 135 orang (80,8%). Paritas ibu hamil yang mengalami kejadian abotrus < 4 kali sebanyak 125 orang (74,9%) Ibu hamil yang tidak memiliki riwayat abortus sebanyak 118 orang (70,7%). Ada hubungan usia Ibu dengan Kejadian Abortus Inkompletus p-Value 0,025. Ada hubungan usia kehamilan dengan kejadian abortus inkompletus p-Value 0,000. Ada hubungan paritas dengan kejadian abortus inkompletus p-Value 0,000. Ada hubungan riwayat abortus dengan kejadian abortus inkompletus p-Value 0,016.

Kesimpulan : Ada hubungan Usia ibu, Usia Kehamilan, Paritas, Riwayat Abortus dengan kejadian abortus Inkompletus di Rumah Sakit Umum Daerah H.M Ryacudu Kotabumi Kabupaten Lampung Utara tahun 2020-2022.

Saran : Disarankan kepada ibu hamil untuk melakukan ANC secara rutin dan mengatur paritas serta usia kehamilan untuk menghindari kejadian abortus.

Kata kunci : Usia, Usia Kehamilan, Paritas, Riwayat Abortus

ABSTRACT

Background: One of the prevalent issues during pregnancy is abortion, with 20 million cases out of 46 million annual births resulting from abortions. Abortion contributes about 5% of pregnancy complications that lead to maternal death. The research aims to identify factors associated with the incidents of incomplete abortions at H.M. Ryacudu Regional General Hospital, Kotabumi, North Lampung Regency, from 2020 to 2022.

Research Method: The study employed a cross-sectional design. The research population consisted of pregnant mothers who experienced abortion and were admitted to the inpatient ward of H.M. Ryacudu Regional General Hospital in Kotabumi, North Lampung from 2020 to 2022, totaling 167 individuals. The sample for this research was also 167 individuals. Total sampling technique was utilized, and Chi-Square test was employed for analysis.

Research Findings: The study found 112 cases (67.1%) of incomplete abortion incidents. Pregnant mothers aged >35 years accounted for 89 individuals (53.3%). Pregnant mothers with a gestational age of <12 weeks during the abortion incident totaled 135 individuals (80.8%). Pregnant mothers with a parity of <4 accounted for 125 individuals (74.9%). Pregnant mothers without a history of abortion amounted to 118 individuals (70.7%). There is a correlation between Maternal Age and Incomplete Abortion Incident with a p-Value of 0.025. There is a correlation between Gestational Age and Incomplete Abortion Incident with a p-Value of 0.000. There is a correlation between Parity and Incomplete Abortion Incident with a p-Value of 0.000. There is a correlation between Abortion History and Incomplete Abortion Incident with a p-Value of 0.016.

Conclusion: There is a relationship between maternal age, gestational age, parity, history of abortion with the incidence of incomplete abortion at the H.M Ryacudu Kotabumi Regional General Hospital, North Lampung Regency in 2020-2022.

Suggestions : Pregnant mothers are advised to undergo regular antenatal care and manage their parity and gestational age to prevent abortion incidents.

Keywords : Maternal Age, Gestational Age, Parity, Abortion History

INTRODUCTION

Maternal Mortality Rate (MMR) serves as a barometer of maternal healthcare in a country. A high MMR indicates inadequate maternal healthcare services, whereas a low MMR indicates satisfactory maternal healthcare services (Prawirohardjo, 2020). Mortality and morbidity among women during childbirth are significant issues in developing countries. In impoverished nations, approximately 25-50% of deaths among women of childbearing age are related to pregnancy-related causes. Death during childbirth typically stands as the primary factor contributing to mortality among young women during their peak productive years. More than 50% of deaths in developing countries could actually be prevented with available technology and relatively low costs (JNPKKR-POGI, 2018).

Currently in Southeast Asia, Indonesia has the highest Maternal Mortality Rate (MMR). Based on the results of the Indonesian Demographic and Health Survey (IDHS) in 2018, the maternal mortality rate was 359 per 100,000 live births. However, according to data from the World Health Organization (WHO) in 2020, the maternal mortality rate in Indonesia was 211 per 100,000 live births (WHO, 2020). When compared to other countries, Indonesia ranks third among ASEAN countries, following Laos and Myanmar. Furthermore, according to the Ministry of Health data, the number of maternal deaths has shown an increase each year. In 2020, there were 4,627 maternal deaths, and in 2021, this number escalated to 7,389 deaths (Ministry of Health of the Republic of Indonesia, 2022).

When interpreted globally, it is evident that Indonesia is still far from achieving the global SDGs targets. To lower the Maternal Mortality Rate (MMR) to 183 per 100,000 live births by 2024 and less than 70 per 100,000 live births by 2030, according to the action plan of the Public Health Program 2020-2025, more comprehensive and strategic efforts are required. Achieving the MMR target reduction by 2024 necessitates an annual decrease in maternal deaths of at least 5.5% (Ministry of Health of the Republic of Indonesia, 2020). Maternal mortality involves high-risk pregnancy situations and obstetric complications that could endanger the lives of both

mothers and fetuses if not adequately addressed (Manuaba, 2010). Dealing with this issue is complex due to the multifaceted factors underlying maternal and neonatal illnesses or deaths before childbirth (Indrawati, 2016).

In Lampung province, the number of maternal deaths has fluctuated over the past three years: 117 cases in 2020, 187 cases in 2021, and 96 cases in 2022 (Annual Report of the Public Health Department, 2022). Looking at the causes of maternal deaths in Lampung Province in 2020, the highest number of cases were due to hemorrhage (44 cases), hypertension (24 cases), disorders related to the circulatory system (9 cases), infections (2 cases), metabolic disorders (1 case), and other causes (35 cases) (Provincial Health Profile of Lampung, 2020, 2021). In 2021, the leading cause of maternal mortality was Covid-19, accounting for 45%, followed by hemorrhage and pregnancy-related hypertension (Performance Report of the Provincial Health Office of Lampung, 2021, 2022). In 2022, maternal deaths in Lampung Province were attributed to various causes: hemorrhage (25 cases), hypertension (24 cases), heart conditions (11 cases), Covid-19 (2 cases), infections and blood disorders (1 case each), and other causes (32 cases) (Family Health Data of Lampung Province, 2022).

Adapun jumlah kematian ibu di Kabupaten Lampung Utara juga mengalami pasang surut pada tiga tahun terakhir yaitu 10 kasus pada tahun 2020, 12 kasus pada tahun 2021 dan 7 kasus pada tahun 2022 (Laporan Kinerja Dinas Kesehatan Provinsi Lampung Tahun 2021, 2022). Meanwhile, the maternal mortality rate at H.M Ryacudu Kotabumi Regional General Hospital in the obstetrics ward has decreased in the last three years, with 2 cases in 2020, 1 case in 2021, and no maternal deaths recorded in the year 2022 (North Lampung Health Office, 2023).

According to the World Health Organization (WHO), global abortion incidents amount to approximately 21,200,000 with a rate of 16 per 1,000 women aged 15-44 years. In Southeast Asia, the incidence of abortion is about 3,130,000 with a rate of 22 per 1,000 women aged 15-44 years. The frequency of abortion in Indonesia is 10%-15% of 5

million pregnancies annually, which translates to 750,000-1.5 million cases (Asniar, 2022). The incidence of abortion in North Lampung Regency in 2021 was 1,051 cases, and in 2022, there were 1,044 cases. In the North Lampung Regency in 2020, there were 91 cases, 51 cases in 2021, and 22 cases in 2022.

The inpatient records of H.M Ryacudu Regional General Hospital's maternity ward in North Lampung recorded 63 cases of Incomplete Abortion in 2020, followed by cases such as premature rupture of membranes (139 cases), severe preeclampsia (66 cases), postpartum hemorrhage (39 cases), Hyperemesis Gravidarum (HEG) (28 cases), premature labor or contractions (21 cases), cysts (20 cases), placenta previa (18 cases), breech presentation (18 cases), and post-term pregnancies (8 cases) (Inpatient Patient Register Book at H.M Ryacudu Regional General Hospital, 2020).

In 2021, the inpatient records showed 45 cases of Incomplete Abortion, 8 cases of manual aid, 2 cases of perineal rupture, 24 cases of placental disorders, 5 cases of imminent abortion, 50 cases of premature rupture of membranes, 26 cases of severe preeclampsia, 6 cases of Hyperemesis Gravidarum (HEG), 10 cases of hypertension, 10 cases of laparotomy, 2 cases of hysterectomy, 9 cases of cysts, 6 cases of bleeding, 6 cases of contractions, 2 cases of post-date pregnancies, and 2 cases of retained placenta (Inpatient Patient Register Book at H.M Ryacudu Regional General Hospital, 2021).

In 2022, the inpatient records recorded 17 cases of Incomplete Abortion, 1 case of premature delivery, 1 case of perineal rupture, 11 cases of placental disorders, 1 case of imminent abortion, 9 cases of premature rupture of membranes, 2 cases of severe preeclampsia, 3 cases of Hyperemesis Gravidarum (HEG), 1 case of hypertension, 2 cases of laparotomy, 3 cases of cysts, 3 cases of bleeding, 1 case of contractions, 2 cases of post-date pregnancies, and 21 cases of retained placenta (Inpatient Patient Register Book at H.M Ryacudu Regional General Hospital, 2022).

In Indonesia, maternal mortality and morbidity are still significant problems. Direct causes of maternal death in Indonesia, as in other countries, are primarily obstetric complications, with hemorrhage accounting for 30-35%, infections for 20-25%, and gestosis for 15-17% of maternal deaths. Abortion-related deaths are also included within hemorrhage and infection categories. Only around 5% of maternal deaths result from pre-existing diseases aggravated by pregnancy, such as chronic heart disease and infections. The estimated frequency of spontaneous abortion is around 15-20%

of all pregnancies (Prawirohardjo, 2020). Maternal death is influenced by non-technical factors, such as low socioeconomic status, lack of empowerment, and low education level (JNPKKR-POGI, 2018).

Research on maternal mortality indicates that women who experience abortion-related complications, such as hemorrhage, perforation, infection, and shock, are at risk of death. In the case of Incomplete Abortion, severe bleeding can lead to shock, and bleeding will not cease until the remaining conception is expelled. Risk factors for Incomplete Abortion include maternal age and parity (Prawirohardjo, 2020). Over 80% of abortions occur within the first 12 weeks of pregnancy, and the risk of spontaneous abortion increases with parity (frequency of pregnancies) and maternal age. Clinically detected spontaneous abortion rates rise from 12% in women under 20 years to 26% in women over 40 years. Furthermore, the incidence of abortion increases in women pregnant within 3 months after term childbirth (Kenneth et al., 2013).

Similarly, in the province of Lampung, particularly in North Lampung Regency and H.M Ryacudu Regional General Hospital, the leading causes of maternal deaths are still hemorrhage, eclampsia, and infection. The primary cause of maternal death is obstetric complications due to hemorrhage, including infected Incomplete Abortion cases (Sub-district of Family Health Dinkes Lampung Province, 2022, Sub-district of Family Health Dinkes North Lampung Regency, 2022, and Medical Record of H.M Ryacudu Regional General Hospital, 2022).

Based on research data regarding the relationship between a history of abortion in pregnant mothers and abortion incidents conducted by Lismawati Fauzi in 2020, a correlation was found between abortion incidents and other factors influencing their occurrence, such as maternal age, parity, occupation, gestational age, age at marriage, and birth interval. Similarly, a study conducted by Pitriani Risa in 2013 on factors related to Incomplete Abortion at the Arifin Achmad Regional General Hospital in Riau Province showed a cause-and-effect relationship between age, gestational age, birth interval, parity, and Incomplete Abortion incidents.

RESEARCH METHODS

The study was conducted using a Cross-Sectional method, involving the collection of secondary data from a subset of subjects at H.M Ryacudu Regional General Hospital in North Lampung from 2020 to 2022. The study population consisted of pregnant mothers who experienced Incomplete Abortion and were hospitalized in the H.M Ryacudu Regional General Hospital's inpatient

ward between 2020 and 2022, totaling 167 individuals. The sample size was 167 individuals. The research employed a total sampling technique. The Chi-Square test was used for bivariate analysis.

The researcher utilized secondary data from medical records of pregnant mothers who experienced Incomplete Abortion at H.M Ryacudu Regional General Hospital in North Lampung. The data collection involved observing both the independent variables and dependent variables simultaneously.

In this study, the dependent variable is pregnant mothers who experienced Incomplete Abortion, while the influencing factors of Incomplete Abortion incidents are the mother's age, gestational age, parity, and history of abortion.

RESEARCH RESULTS

Univariate Analysis

Table 1

The frequency of Incomplete Abortion incidents at H.M Ryacudu Regional General Hospital in North Lampung Regency in 2020 - 2022

Variable	Total	Percentage
Yes	112	67.1
No	55	32.9

Based on Table 1, it can be observed that there were 112 cases of Incomplete Abortion incidents (67.1%) and 55 cases of non-Incomplete Abortion incidents (32%).

Table 2

The frequency of maternal age who experienced Incomplete Abortion at H.M Ryacudu Regional General Hospital in North Lampung Regency in 2020 - 2022

Variable	Total	Percentage
≥ 35 years old	89	53.3
< 35 years old	78	46.7

Based on Table 2, it can be observed that among pregnant mothers who experienced abortion, the age of pregnant women who experienced abortion >35 years was 89 people (53.3%) and <35 years was 78 people (46.7%).

Table 3

The frequency of gestational age among pregnant women who experienced Incomplete Abortion at H.M Ryacudu Regional General Hospital in North Lampung Regency in 2020 -2022

Variable	Total	Percentage
<12 weeks	135	80.8
> 12 weeks	32	19.2

Based on Table 3, it can be observed that among pregnant mothers who experienced abortion, there were 135 cases (80.8%) with a gestational age of less than 12 weeks and 32 cases (19.2%) with a gestational age of more than 12 weeks.

Table 4

The frequency distribution of parity among pregnant mothers who experienced Incomplete Abortion at H.M Ryacudu Regional General Hospital in North Lampung Regency in 2020 - 2022

Variable	Total	Percentage
≥ 4 times	42	25.1
< 4 times	125	74.9

Based on Table 4, it can be observed that among pregnant mothers who experienced abortion, there were 42 cases (25.1%) with parity of 4 or more pregnancies and 125 cases (74.9%) with parity of less than 4 pregnancies.

Table 5

The frequency distribution of abortion history among pregnant mothers who experienced Incomplete Abortion at H.M Ryacudu Regional General Hospital in North Lampung Regency in 2020 - 2022

Variable	Total	Percentage
Yes	49	29.3
No	118	70.7

Based on Table 5, it can be observed that among pregnant mothers who experienced Incomplete Abortion, there were 49 cases (29.3%) with a history of abortion and 118 cases (70.7%) without a history of abortion.

Bivariate Analysis

Based on Table 6 above, it can be observed that among the 89 responder over 35 years old and experienced Incomplete Abortion, there were 67 individuals (75.3%), while those who did not experience Incomplete Abortion were 22 individuals (24.7%). Among the 78 respondents who were under 35 years old and experienced Incomplete Abortion, there were 45 individuals (57.7%), while those who did not experience Incomplete Abortion

were 33 individuals (42.3%). The statistical test results yielded a p-value of 0.025, indicating a

significant association between age and the occurrence of Incomplete Abortion.

Table 6
The relationship between maternal age and Incomplete Abortion incidents at H.M Ryacudu Regional General Hospital in North Lampung Regency in 2020 - 2022

Age	Abortus Inkompletus				Total		p-Value	OR (95% CI)
	Yes		No					
	n	%	n	%	n	%		
≥ 35 years old	67	75,3	22	24,7	89	100	0,025	2,233 (1,156 - 4,315)
< 35 years old	45	57,7	33	42,3	78	100		

Table 7
The relationship between gestational age and Incomplete Abortion Incidents at H.M Ryacudu Regional General Hospital in North Lampung Regency in 2020 - 2022

Gestational Age	Abortus Inkompletus				Total		p-Value	OR (95% CI)
	Yes		No					
	n	%	n	%	n	%		
< 12 weeks	100	74,1	35	25,9	135	100	0,000	4,762 (2,113 - 10,732)
≥ 12 weeks	12	37,5	20	62,5	32	100		

Based on Table 7 above, it can be observed that among the 135 respondents with a gestational age of less than 12 weeks who experienced Incomplete Abortion, there were 100 individuals (74.1%), while those who did not experience Incomplete Abortion were 35 individuals (25.9%). Among the 32 respondents with a gestational age of

more than 12 weeks who experienced Incomplete Abortion, there were 12 individuals (37.5%), while those who did not experience Incomplete Abortion were 20 individuals (62.5%). The statistical test results yielded a p-value of 0.000, indicating a highly significant relationship between gestational age and the occurrence of Incomplete Abortion.

Table 8
The Relationship Between Parity and Incomplete Abortion Incidents at H.M Ryacudu Regional General Hospital in North Lampung Regency In 2020-2022

Parity	Abortus Inkompletus				Total		p-Value	OR (95% CI)
	Yes		No					
	n	%	n	%	n	%		
≥ 4 times	42	85,7	7	14,3	49	100	0,002	4,114 (1,706-9,923)
< 4 times	70	59,3	48	40,7	118	100		

Based on Table 8 above, it can be observed that among the 49 respondents with parity of more than 4 pregnancies who experienced Incomplete Abortion, there were 42 individuals (85.7%), while those who did not experience Incomplete Abortion were 7 individuals (14.3%). Among the 118 respondents with parity of less than 4 pregnancies

who experienced Incomplete Abortion, there were 70 individuals (59.3%), while those who did not experience Incomplete Abortion were 48 individuals (40.7%). The statistical test results yielded a p-value of 0.0002, indicating a highly significant relationship between parity and the occurrence of Incomplete Abortion.

Table 9
The Relationship Between History of Abortion and Incomplete Abortion Incidents at H.M Ryacudu Regional General Hospital in North Lampung Regency In 2020-2022

History of Abortion	Abortus Inkompletus		Total	p-Value	OR (95% CI)
	Yes	No			

	n	%	n	%	n	%		
Yes	40	81,6	9	18,4	49	100	0,016	2,840
No	72	61.0	46	39,0	118	100		(1,260 – 6,397)

Based on Table 9, it can be observed that among the 49 respondents with a history of abortion who experienced Incomplete Abortion, there were 40 individuals (81.6%), while those who did not experience Incomplete Abortion were 9 individuals (18.4%). Among the 118 respondents with a history of abortion who experienced Incomplete Abortion, there were 72 individuals (61%), while those who did not experience Incomplete Abortion were 46 individuals (39%). The statistical test results yielded a p-value of 0.016, indicating a significant relationship between a history of abortion and the occurrence of Incomplete Abortion.

DISCUSSION

The Relationship Between Maternal Age and the Incidence of Incomplete Abortion

Maternal age seems to play a significant role in the occurrence of abortion. Both very young mothers, below 20 years old, and older mothers have a similar risk, and abortion rates increase for mothers above the age of 35 (Manuaba, 2012). High parity numbers (parities >3) also influence the incidence of abortion. The risk of abortion increases with higher parity numbers. Conversely, low parity (parity 1) can also lead to abortion (Prawirohardjo, 2020).

Factors contributing to abortion include parity at 25%, and age at 12-26% (Fajria, 2013). Other factors contributing to abortion include abortion history, pregnancy interval, fetal factors, genetic factors (5%), anatomical factors (10-15%), endocrine factors (10-20%), infections, immunological factors, such as tuberculosis or karsinomatosis, which rarely lead to abortion. The factors of age at 12-26% and parity at 25% have significant influence. The risk of abortion is higher with increased maternal age and increasing parity (Manuaba & Ida, 2014).

The relationship between maternal age and the occurrence of Incomplete Abortion is supported by several previous studies. A study by Rochayati et al. from Dr. Soetomo Hospital in Surabaya, as cited by Rustam Mochtar (2015), concluded that the frequency of High-Risk Pregnancy criteria was 30.8%, with one of the factors being maternal age of 35 years or older. According to Williams et al. (2015), the risk of abortion increases to 26% for women over 35 years of age (Williams, 2015).

Abortion risks are more frequent in young mothers below 20 years and older mothers above 35 years. Age can influence abortion occurrences; those below 20 years may have immature reproductive

systems for pregnancy, affecting maternal health and fetal growth and development. Meanwhile, abortion in mothers over 35 years is attributed to decreased reproductive function, chromosomal abnormalities, or other illnesses (Manuaba, 2012).

This study is consistent with the research conducted by Muhammad Apriliandy Shariff (2015), "Factors Associated with Abortion Incidence". The results showed that out of 60 sample cases, 61.7% (37 mothers) were aged between 20-35 years, 30% (18 mothers) were over 35 years old, and 4.2% (5 mothers) were below 20 years old.

Research by Risa Pitriani (2022) on "Factors Associated with Incomplete Abortion" found significant associations with low education, short pregnancy intervals, and employment as risk factors for incomplete abortion, while variables like hemoglobin levels and parity were inversely related. Age was a confounding variable related to parity. Sitti Hubaya Matjino (2015) studied "Risk Factors for Abortion Incidence" in Ternate's Dr. Chasan Boesoirie Regional General Hospital. Risk factors for abortion included contraceptive failure, socioeconomic status, abortion history, and parity, while pregnancy outside of marriage was not a risk factor.

Linda Yanti (2018) studied "Determinant Factors of Abortion Incidence in Pregnant Women: A Case-Control Study". The study found a significant relationship between maternal age, gravida, pregnancy age, parity, pregnancy interval, and abortion incidence. The combined effects of maternal age, gravida, pregnancy age, parity, and pregnancy interval significantly influenced abortion incidence in pregnant women.

The findings from the research conducted at H.M Ryacudu Regional General Hospital in Kotabumi, North Lampung, indicate that the occurrence of Incomplete Abortion in pregnant mothers is closely linked to maternal age, with a significant relationship. This might be due to a significant number of pregnant mothers not utilizing Long-Term Family Planning contraception methods.

According to the researcher's opinion, maternal age impacts abortion occurrence because age affects an individual's reproductive system readiness during pregnancy. Particularly, becoming pregnant at a very young age (below 20 years) or advanced age (above 35 years) may reduce the quality of the reproductive system, potentially endangering maternal health, labor, and the

postpartum period. Generally, the ideal age for pregnancy falls between 20 and 35 years, according to literature.

The Relationship Between Gestational Age and Incomplete Abortion Incidents

William et al. (2012) state that the occurrence of Incomplete Abortion is when the embryo has exited the uterus while the placenta, either entirely or partially, remains retained within the uterus. This typically happens after a pregnancy has reached a gestational age of 10 weeks or more. In another study by Sarwono Prawirohardjo (2020), it is noted that during the early stages of an abortion, there is bleeding from the basal decidua, followed by necrosis of surrounding tissue, which leads to the detachment of the conceptus (embryo) from the uterine lining. This detached conceptus is considered a foreign object within the uterus. Subsequently, the uterus contracts in order to expel this foreign object. In pregnancies of less than 8 weeks, the embryo is usually expelled entirely since the chorionic villi have not deeply penetrated the decidua. However, during weeks 8 to 14 of pregnancy, the chorionic villi penetrate the decidua more deeply, resulting in the placenta not being completely released. This often leads to significant bleeding in pregnancies beyond 14 weeks. Following the rupture of the amniotic sac, a deceased embryo will be expelled in the form of an empty amniotic sac (blighted ovum/shapeless small object), followed by the placenta.

At a gestational age of less than 12 weeks, the chorionic villi have not yet deeply penetrated the decidua. As a result, the product of conception can be expelled, characterized by bleeding within the basal decidua. This is followed by tissue necrosis, which can lead to the detachment of the product of conception, causing it to be perceived as a foreign object within the uterus. This triggers uterine contractions to expel the foreign object (Lindayanti, 2018).

This is supported by several previous studies, as stated by Muhammad Apriliandy Shariff (2015) in "Factors Associated with Abortion Incidents". The research findings indicate that out of 60 sampled cases, 61.7% (37 mothers) were aged between 20-35 years, 30% (18 mothers) were aged >35 years, and 4.2% (5 mothers) were aged <20 years.

The study conducted by Lindayanti (2018) on "Determinant Factors of Abortion Incidents in Pregnant Mothers: A Case-Control Study" revealed significant findings. The research identified that there is a notable association between maternal age and the incidence of abortion ($p < 0.01$; $r = 0.297$).

Similarly, a significant correlation was found between gravida (number of pregnancies) and the occurrence of abortion ($p < 0.01$; $r = -0.272$), as well as between gestational age and the incidence of abortion ($p < 0.05$; $r = -0.224$). Parity (number of live births) and interpregnancy interval (time between pregnancies) also demonstrated significant links with abortion ($p < 0.05$; $r = -0.252$ and $p < 0.05$; $r = -0.224$ respectively). The combined effect of maternal age, gravida, gestational age, parity, and interpregnancy interval significantly impacts the likelihood of abortion in pregnant mothers ($F = 38.244$, $p < 0.01$; $R^2 = 0.574$). Furthermore, gestational age emerged as the most influential factor in abortion occurrences among pregnant mothers ($t = -13.093$; $p < 0.01$; partial correlation = -0.751).

The researcher's point of view is that the occurrence of Incomplete Abortion, particularly concerning maternal gestational age, is notably high, and there is a significant and meaningful relationship, as supported by the research findings. This aligns with the study's results where the majority of respondents had a gestational age of <12 weeks, accounting for 100 individuals (74.1%). This could be attributed to various stimuli causing uterine contractions in pregnant women, such as sudden shocks, engaging in strenuous activities, falls, exposure of the uterus/abdomen to blunt objects, or accidents resulting in uterine jolts, all of which can lead to Incomplete Abortion. Alternatively, direct trauma to the fetus, such as damage to fetal membranes by instruments, objects, or medications, could also contribute to this phenomenon.

Parity Relationship (Birth Frequency) with Incomplete Abortion Incidents

Mothers with parity of 1 time and >3 times have a greater risk of experiencing abortion. If a mother becomes pregnant and gives birth too frequently, it can lead to an unhealthy uterus, which can result in damage to the blood vessels in the uterine wall. This can affect the circulation of nutrients to the fetus, leading to decreased fetal nutrition and maternal death. This is in line with the theory proposed by Cunningham (2012), stating that parity of 2-3 is the safest in terms of maternal mortality. Parity 1 and high parity (>3 times) are associated with higher maternal mortality rates. The higher the parity, the higher the maternal mortality. Parity risk can be managed through improved obstetric care and the use of family planning programs.

Parity influences the occurrence of abortion in pregnancies strained by the presence of a fetus. If a woman gives birth too frequently, her uterus will become weaker. If a mother has given birth to 4 or

more children, it's necessary to be cautious about potential complications during pregnancy, childbirth, and the postpartum period. The risk of spontaneous abortion increases with maternal parity (Murphy, 2012).

Risky parity leads to weakness and fatigue of the uterine muscles, making bleeding more likely to occur. When risky parity is coupled with both young and advanced maternal age, uterine conditions and maternal health become susceptible to pregnancy-related pathologies. This can lead to prolonged labor, postpartum hemorrhage, and abortion (Mariza, 2017).

These observations are supported by various studies that have explored the relationship between parity and the incidence of Incomplete Abortion. Research by Rochayati et al. from Dr. Soetomo Hospital in Surabaya, as cited by Rustam Mochtar (2015), concluded that the frequency of High-Risk Pregnancy criteria had a proportion of 30.8%, and one of the contributing factors was parity or a birth frequency of four or more times. Another study by Williams (2009) noted that over 80% of abortions occur within the first 12 weeks of pregnancy, and the risk of spontaneous abortion increases with maternal parity (birth frequency).

Andani's research (2020) on the Relationship between Age and Parity with Abortion Incidence supports the idea that age and parity are related to abortion incidence. This is because reproductive organs might not be mature enough for fertilization at a young age and might become less receptive to pregnancy at an advanced age. However, the study suggests that parity alone might not directly influence abortion incidence as it can be affected by other factors like infections, placental abnormalities, and lifestyle.

Linda Yanti's study (2018) on Determinants of Abortion Incidence in Pregnant Women: A Case-Control Study revealed significant relationships between maternal age, gravidity, gestational age, parity, and the occurrence of abortion. The collective influence of maternal age, gravidity, gestational age, parity, and inter-pregnancy interval significantly affects abortion incidence in pregnant women. Gestational age emerges as the most influential factor in abortion incidence ($t=-13.093$; $p<0.01$; partial correlation= -0.751).

The research conducted at H.M. Ryacudu General Hospital in Kotabumi, North Lampung Regency, overall indicates a high and significant correlation between Incomplete Abortion and parity (birth frequency). This could potentially be attributed to a majority of pregnant women not using Long-Acting Reversible Contraception (LARC) and

adhering to myths/beliefs that equate more children with more blessings.

The researcher's opinion aligns with the notion that parity significantly affects abortion incidence. The study found that out of 49 respondents who had a parity of >4 times and experienced Incomplete Abortion, 42 individuals (85.7%) fell into this category. This is because as a person's parity increases, it affects their reproductive system. Frequent childbirth weakens the uterus, making it difficult to sustain conception, ultimately leading to a higher likelihood of abortion.

The Relationship Between Abortion History and Incomplete Abortion Incidents

Pregnant women with a history of previous abortions need to be cautious about the possibility of experiencing abortion again. Data from several studies show that after experiencing one abortion, a person has a 15% higher risk of experiencing another abortion. Pregnant women who have had two consecutive abortions have an even higher risk of abortion, with an increased risk of up to 25% (Prawirohardjo, 2020).

The occurrence of abortion is suspected to have an impact on subsequent pregnancies, both in terms of complicating the pregnancy and affecting the pregnancy outcomes. Women with a history of abortion have a higher risk of premature delivery and recurrent abortion.

This is supported by various studies that have explored the relationship between abortion history and the incidence of Incomplete Abortion by several researchers. For example, a study by Wilcox et al. (1988), as cited by Sarwono (2008), concluded that a study of 221 women followed over 707 total menstrual cycles found a total of 198 pregnancies, with 43 (22%) experiencing abortion before their next menstrual period. Other studies report that after one spontaneous abortion, couples have a 15% risk of experiencing another miscarriage, and if there have been two prior abortions, the risk increases to 25%. Some studies predict that the risk of abortion after three consecutive abortions is 30-45% (Sarwono, 2008).

The research conducted at H.M. Ryacudu General Hospital in Kotabumi, North Lampung Regency, overall indicates a high and significant correlation between Incomplete Abortion and a history of abortion.

According to the researcher's outlook, parity influences the occurrence of abortion in pregnancies strained by the presence of a fetus. If a woman gives birth too frequently, her uterus will become weaker.

CONCLUSION

This research was conducted to determine the relationship between age, gestational age, parity, and abortion history. After conducting analysis and statistical testing, the following conclusions were drawn:

1. There were 112 cases (67.1%) of incomplete abortion and 55 cases (32%) of non-incomplete abortion.
2. Pregnant women experiencing abortion were >35 years old, accounting for 89 individuals (53.3%), while those <35 years old were 78 individuals (46.7%).
3. Pregnant women experiencing abortion had gestational ages <12 weeks, totaling 135 individuals (80.8%), while those >12 weeks were 32 individuals (19.2%).
4. Pregnant women with ≥4 parity accounted for 42 individuals (25.1%), and those with <4 parity were 125 individuals (74.9%).
5. There were 49 pregnant women (29.3%) with a history of abortion and 118 pregnant women (70.7%) without a history of abortion.
6. There is a relationship between maternal age and the incidence of incomplete abortion at H.M. Ryacudu General Hospital in Kotabumi, North Lampung Regency, from 2020 to 2022. The statistical test result yielded a p-Value of 0.025, OR=2.233, (95% CI OR) 1.156 - 4.315.
7. There is a relationship between gestational age and the incidence of incomplete abortion at H.M. Ryacudu General Hospital in Kotabumi, North Lampung Regency, from 2020 to 2022. The statistical test result yielded a p-Value of 0.000, OR=4.762, (95% CI OR) 2.113 - 10.732.
8. There is a relationship between parity and the incidence of incomplete abortion at H.M. Ryacudu General Hospital in Kotabumi, North Lampung Regency, from 2020 to 2022. The statistical test result yielded a p-Value of 0.000, OR=9.250, (95% CI OR) 2.175 - 31.586.
9. There is a relationship between abortion history and the incidence of incomplete abortion at H.M. Ryacudu General Hospital in Kotabumi, North Lampung Regency, from 2020 to 2022. The statistical test result yielded a p-Value of 0.016, OR=2.840, (95% CI OR) 1.260 – 6.397.

REFERENCES

Anik Maryunani, 2016, Asuhan Kegawatdaruratan Dalam Kebidanan. Trans Info Media. Jakarta.
Asniar, 2022, Analisa Faktor-Faktor Yang Mempengaruhi Kejadian Abortus. Jurnal Kedokteran dan Kesehatan-Fakultas

Kedokteran Universitas Islam Sumatera Utara
Cunningham, 2013, Obstetri Williams. Edisi 23. Volume 1. Jakarta: EGC.
Dinas Kesehatan Provinsi Lampung Tahun 2022. (2022). *Laporan Kinerja (LKj) Dinas Kesehatan Provinsi Lampung Tahun 2021*. Lampung: Dinas Kesehatan Provinsi Lampung.
Dorlan, 2020, Kamus Kedokteran, Jakarta
Gugun et all, 2011, Wacana Pengarusan jender, Yogyakarta: Idea Press
Fauzi, N. L. (2020). *Hubungan Riwayat Abortus Pada Ibu Hamil Dengan Kejadian Abortus*. Yogyakarta: Skripsi Fakultas Ilmu Kesehatan Universitas Aisyiyah.
Ida Bagus Gde Manuaba, 2010, Ilmu Kebidanan, Penyakit Kandungan, dan Keluarga Berencana, Jakarta.
JNPKKR-POGI, 2018, Pelayanan Kesehatan Maternal dan Neonatal, Yayasan Bina Pustaka Sarwono Prawirohardjo, Jakarta, 2018).
Kementrian Kesehatan Republik. (2020). *Rencana Aksi Program Kesehatan Masyarakat Tahun 2020-2025*. Jakarta Selatan: Direktorat Jenderal Kesehatan Masyarakat Kementrian Kesehatan.
Kementrian Kesehatan Republik Indonesia. (2022). *Profil Kesehatan Indonesia Tahun 2021*. Jakarta: Kementrian Kesehatan Republik Indonesia.
Kenneth J.Leveno, Panduan Ringkas Obstetri Williams, Jakarta, 2013
Medical Record Rumah Sakit H.M Ryacudu Kotabumi, Rekapitan Laporan Kematian Tahun 2019, 2020, 2021, dan Tahun 2022
Notoatmodjo, 2018, *Metedologi Penelitian Kesehatan*. PT. Rhineka Cipta. Jakarta.
Pemerintah Provinsi Lampung Dinas Kesehatan. (2021). *Profil Kesehatan Provinsi Lampung Tahun 2020*. Bandar Lampung: Dinas Kesehatan Provinsi Lampung.
Risa Pitriani. (2013). Faktor-Faktor yang Berhubungan dengan Abortus Inkomplit di Rumah Sakit Umum Daerah Arifin Achmad Provinsi Riau. *Jurnal Kesehatan Komunitas*, Vol. 2, No. 2, 83-87.
Rustam Mochtar, Sinopsis Obstetri Jilid I, Jakarta 2013
Rustam Mochtar, Sinopsis Obstetri Jilid II, Jakarta 2015
Sarwono Prawirohardjo. (2020). *Ilmu Kebidanan*. Jakarta: PT Bina Pustaka Sarwono Prawirohardjo.

Saifudin, 2018, Buku Acuan Nasional Pelayanan Kesehatan maternal dan neonatal, Jakarta: PT Bina Pustaka Sarwono Prawirohardjo.
Subdin Kesga Dinas Kesehatan Propinsi Lampung, Laporan PWS-KIA Tahun 2020,2021,2022, Bandar Lampung 2022

Subdin Kesga Dinas Kesehatan Kabupaten Lampung Utara, Laporan PWS-KIA Tahun 2020,2021,2022, Kotabumi2016
Sugiyono, 2019, *Metode Penelitian Kuantitatif, Kualitatif dan R&D*, Alfabeta, Bandung
Unpad, 2018, *Obstetri Operatif edisi 2*, Unpad,Bandung

HOSPITAL BUSINESS STRATEGY PLANNING IN THE ERA OF NATIONAL HEALTH GUARANTEE (JKN)

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ABSTRAK : PERENCANAAN STRATEGI USAHA RUMAH SAKIT DI ERA JAMINAN KESEHATAN NASIONAL (JKN)

Penelitian ini dilatarbelakangi oleh perkembangan Jaminan Kesehatan Nasional dari tahun ke tahun yang terus meningkat, menjadikan rumah sakit mampu mengoptimalkan strategi bisnis di era JKN. Salah satu langkah dalam menerapkan strategi bisnis adalah membuat rencana yang baik. Hasil penelitian menunjukkan bahwa perencanaan kesehatan dapat dilakukan melalui beberapa tahapan seperti: (1) menganalisis tujuan dan manfaat yang akan diperoleh, (2) menganalisis dan merancang kebijakan yang dapat didukung oleh pelayanan yang diberikan kepada masyarakat. dan (3) menganalisis implementasi strategi yang akan digunakan. Selain itu, rumah sakit juga dapat menerapkan Standar Pelayanan Operasional (SOP) atau indikator mutu pelayanan, rumah sakit atau fasilitas kesehatan dapat meningkatkan reputasi rumah sakit, meningkatkan kepuasan pasien, dan memastikan pelayanan yang diberikan sesuai dengan standar tertinggi yang diharapkan oleh masyarakat dan regulator. institusi. . Hal ini juga menjadi langkah penting dalam menjaga daya saing sektor kesehatan di era Jaminan Kesehatan Nasional (JKN) dan lingkungan bisnis kesehatan yang semakin kompetitif secara global.

Kata Kunci : Rumah Sakit, Perencanaan, JKN, Strategi Bisnis

ABSTRACT

This research is motivated by the development of National Health Insurance from year to year which continues to increase, making hospitals able to optimize business strategies in the JKN era. One of the steps in implementing a business strategy is making a good plan. The results of the research show that health planning can be carried out through several stages such as: (1) analyzing the goals and benefits that will be obtained, (2) analyzing and designing policies that can be supported by the services provided to the community and (3) analyzing the implementation of strategies will be used. Furthermore, hospitals can also implement Operational Service Standards (SPO) or service quality indicators, hospitals or health facilities can improve the hospital's reputation, increase patient satisfaction, and ensure that the services provided are in accordance with the highest standards expected by the community and regulatory institutions. . This is also an important step in maintaining the competitiveness of the health sector in the era of National Health Insurance (JKN) and an increasingly competitive health business environment globally.

Keywords: Hospital, Planning, JKN, Business Strategy

INTRODUCTION

Hospitals are an integral part of the health system that complement various aspects of comprehensive health services. The direction of hospital development is the main factor in terms of information systems and technology (Irvanti, 2019). One of the development programs carried out by the government is National Health Insurance (JKN). The implementation of National Health Insurance (JKN) by the Social Security Administering Body (BPJS) for Health has had a significant impact on the health services industry, including providing access to

health insurance to previously underserved populations. The SJSN Law is an external factor that influences strategic changes in the health services industry. The program covers a wide range of services, including hospital care, which is one of the main components of the health system. The introduction of JKN brought significant changes to the medical world in Indonesia. As an integral part of this system, hospitals must adapt to new regulations, changing patient needs, and increasing competition (Mariawati et. al., 2023).

Since the launch of the National Health Insurance (JKN) program in 2014, Indonesia has experienced a significant transformation in the health sector. JKN, which is managed by the Health Social Security Administration (BPJS), aims to provide equal and affordable access to health services for all citizens. The payment system which was originally based on fee-for-service has changed to a prospective payment system with INA CBGs rates. These changes encourage hospitals to increase efficiency while maintaining quality of service. Hospital management must anticipate this payment system so that income from BPJS claims remains positive and supports future hospital development (Irwandy & Sjaaf, 2018). The JKN program exists as a response to various fundamental problems in the Indonesian health system, including disparities in access to health services, high health costs, and low quality of services in various regions. By providing comprehensive health protection, JKN is expected to be able to reduce the financial burden on society due to high health costs and improve the quality of health services throughout Indonesia.

Health service providers, whether hospitals, clinics or pharmacies, must adapt to JKN. This demands better operational efficiency and cost management. Apart from that, increasing competition among health service providers also forces them to continue to innovate and improve the quality of services. Facing the JKN era is a challenge in itself, because health service providers need the right strategy, understanding and mutual agreement across all internal departments. Meanwhile, the sustainability of the JKN program requires good risk management and control (Hidayat, 2024).

Business sectors related to health, such as the pharmaceutical industry, health technology and health insurance, must also adapt to the changes brought by JKN. An effective business strategy is the key for health service providers and related business sectors to not only survive but also thrive in the JKN era.

One example of a strategy implemented by private hospitals in facing new threats and opportunities in the JKN era is to focus on policy and operations. Hospital service performance reflects the results of personnel work, both in terms of quantity and quality, in an organization. This performance can be individual performance or group work of personnel. Work results are not only limited to personnel with functional or structural positions, but also cover all levels of personnel in the organization. Meanwhile, financial performance can be measured through the level of profitability, liquidity, solvency

and Cost Recovery Rate (CRR) (Lestari et. al., 2021).

With the right strategy, it is hoped that the quality of health services can continue to improve, and operational costs can be managed more efficiently. People can enjoy more equitable and affordable access to health services, thereby improving their overall well-being and quality of life. In the end, the JKN program can provide maximum benefits for all Indonesian people. This research aims to: (1) analyze the adaptation strategies used by health service providers in responding to new regulations and changing patient needs in the JKN era, (2) analyze the main challenges faced by health service providers in maintaining service quality amidst increasing competition and (3) analyze how the health-related business sector can adapt the strategies implemented to remain competitive in the JKN era.

RESEARCH METHODS

The research method used in this research is literature study (library research). This method was chosen because the aim of this research was to analyze hospital business strategy planning in the JKN era. The data used in this research is secondary data obtained from various literary study sources, such as scientific journals, articles and textbooks related to business strategy in the JKN era. The data sources used in this research were selected by selecting journals, articles and books that were relevant to the research topic in the last 5 years. Selection is carried out using certain criteria, such as accuracy, novelty and credibility of the data source. Furthermore, the data collection technique in this research involves a systematic and thorough search to collect relevant and reliable information related to the topic under study.

RESEARCH RESULTS

This research uses Leavy and Loombo's theory in (Sudirman, 2019) that planning is defined as a process of analyzing and understanding a system, formulating general goals and specific goals, analyzing the effectiveness of various alternative plans and choosing one that is considered good to be used as a reference in achieving optimal goals. In practice, planning for health aspects such as hospitals is an important thing that needs to be done because planning actions will organize the provision, selection and utilization of all resources needed for health activities.

According to (Wijaya, 2019) the stages in making health planning are: (1) analyzing the goals and benefits to be obtained, (2) analyzing and

designing policies that can be supported by services provided to the community and (3) analyzing the implementation of strategies will be used.

Based on the description above, it can be seen that planning is carried out with the aim of achieving common goals and providing the best service to the community. This is in line with research conducted (Sasoko, 2022) that planning aims to: (1) provide direction, (2) improve coordination, (3) reduce uncertainty, (4) increase control and (5) improve time management. In this regard, it can be seen that the current JKN era requires hospitals to be able to maximize the strategies they implement. The development of National Health Insurance from year to year continues to increase and experience development and success. However, there are still many challenges that Indonesia must face in realizing the Universal Health Coverage program (Adiyanta, 2020).

Indonesia as a rule of law country upholds the principle of implementing public interests. This is stated in various statutory regulations, including the 1945 Constitution of the Republic of Indonesia and Law Number 30 of 2014 concerning Government Administration. This health insurance applies to all Indonesian citizens and it is the state's obligation to meet the needs of the community without differentiating between one another. The concept used in implementing this program is the concept of health insurance that covers the entire community. The concept of national health insurance financing implemented by the government is divided into two forms of participation, namely Contribution Assistance Recipients (PBI and Non-PBI Assistance Recipients).

Based on the analysis that has been carried out, in reality the implementation of National Health Insurance has not been carried out optimally and comprehensively among the public because the importance of the program provided by the government has not yet been socialized. The factors behind this are (1) administration which is still complicated and requires a lot of documents, (2) limited infrastructure so that the number of health facilities collaborating with BPJS Health is still limited. This causes people to have to queue for a long time to get health services and (3) the implementation of business strategies that have not been optimally adapted to current needs and technological developments. The most important thing so that a hospital can grow and develop is by making decisions to choose the right strategy for the hospital. The most important thing in choosing a strategy is to pay attention to the environment, both

the internal environment and the external environment within the hospital (Mujiyani, 2023).

Thus, the health business sector can adjust the strategies implemented to remain competitive in the JKN era by paying attention to the challenges and opportunities that exist in the JKN era. This is because it can be a reference in planning a business strategy. Based on the analysis that has been carried out, the challenges faced by hospitals include: (1) adjusting the administrative system, (2) increasing competition and (3) increasing quality and efficiency. Meanwhile, the opportunities faced by hospitals include (1) the latest service innovations, (2) program collaboration with government institutions and (3) technology development. Therefore, it is important for the health sector in developing business strategies to remain flexible and responsive to changes in health policy and changing market dynamics.

According to Duncan in (Iravanti, 2019) the strategic planning process consists of:

1. *Scanning*, namely determining what external variable data and internal variables can influence the organization in carrying out business strategy planning.
2. *Monitoring*, namely reviewing external and internal variable data for the past 3-5 years with the aim of maximizing the implementation of the strategy that will be carried out.
3. *Forecasting*, namely processing data to provide an overview/projection of trends for the next five years with the aim of winning market competition.
4. *Assessing*, namely assessing the forecasting results for the organization so that the organization's strategic position and alternative strategies are known so that the organization can survive environmental changes.

Based on the description above, it can be seen that the implementation of National Health Insurance (JKN) in Indonesia has changed the landscape of the health sector significantly. This is supported by research conducted (Ulandari, 2021) that in planning hospital business strategies in the JKN era, it is necessary to pay attention to the perspective of internal business processes. In relation to service quality, the strategy implemented is to create Operational Service Standards (SPO) or service quality indicators, both in clinical quality, management and patient safety so that they are free from defects (free from deficiencies). By implementing Operational Service Standards (SPO) or service quality indicators, hospitals or health facilities can improve the hospital's reputation, increase patient satisfaction, and ensure that the

services provided comply with the highest standards expected by the public and regulatory agencies. This is also an important step in maintaining the

competitiveness of the health sector in the era of National Health Insurance (JKN) and an increasingly competitive health business environment globally.

Author	Title	Journal name	Method (design, population, sample variables, instruments, analyses)	Result
Rehulina Manita ¹ , Indra Afrita	Accessibility of Financing in the National Health Insurance Program	Journal Of Social Science Research, 4-1-2024	Design : normative juridical research methods Population : - Sample : - Variable :- Instrument : library research analysis pendekatan teori dan asas hukum:	the legal basis that regulates the accessibility of National Health Insurance financing will be revealed as well as the state's responsibility in providing equitable health services for all citizens, whether classified as PBI or non-PBI.
Femmy Iravanti, Grace Waturandang dan Putri Yoen Aulina	Analysis of the Harapan Jayakarta Hospital Business Strategy Palm Using a Balance Scorecard Approach	Jurnal Manajemen Dan Administrasi Rumah Sakit Indonesia (MARSI) Volume 3 no 2 Oktober 2019	Design : method of analyzing qualitative data by obtaining data through observation Population : management of hope Harapan Jayakarta hospital Sample : board of director namely general director and deputy director of finance and marketing Variable : develop a business plan Instrument : in-dept interviews, discussion group focus, desk research Analysis : balanced scorecard methods	The beneficial for the management of the hope Harapan Jayakarta hospital as an input in the consideration of decision making about the hospital's strategic bussines plan Harapan Jayakarta Hospital. And other researchrs can use the results of this study as reference material in conducting further research. This study is also expected to broaden knowledge horizons for both researches and others.
Ahmad Zain Sarnoto ¹ , Sri Tuti Rahmawati ² , Almira Ulimaz ³ , Devin Mahendika ⁴ , Singgih Prastawa ⁵	Analysis of the influence of the Student Center Learning Model on Learning Outcomes : Literature Review Study	Jornal of Education and Entrepreneurship, 11-2-2023	Design : literature study method Population : journals, articles and book relevant to the research topic Sample : data from various literature study sources Variable : data Instrument : articles related to Student Center Learning and student learning outcomes Analysis : meta-analysis techniques	the use of the Student Center Learning learning model has a significant positive effect on student learning outcomes.
Deden Hidayat, Adang Bachtiar	Analysis of Cost Control Management of BPJS	JOURNAL SYNTAX IDEA p-ISSN: 2723-4339 e-ISSN:	Design : qualitative research methods Population :	the management of controlling the costs of inpatient services for BPJS Welfare patients is

Kesehatan Inpatient Services	2548-1398 Vol. 6, No. 04, April 2024	journals, articles and book relevant to the research topic Sample : : data from various literature study sources Variable : data Instrument : Analysis : analyzed in three stages, namely data reduction, data presentation and conclusion drawing	a joint effort between three components of health service providers, namely the Ministry of Health, BPJS, and health facilities
Wiwik Lestari ^{1*} , Laksono Trisnantoro ² , Ni Luh Putu Eka Putri Andayani ³	Overview of Hospital Performance before and After the National Health Insurance Era	Journal of Health Services Management, 24- 03-2021 Design : Descriptive research Population : data on outpatient visits, inpatient visits, patient income reports from social security administering Agency (BPJS) and financial reports before the implementation of National Health Insurance (JKN) in 2011 to 2013 totaling 36 months and after implementing JKN in 2014 to 2019 totaling 72 months. Sample : 108 months Variable : implementation of the JKN program, service performance and financial performance at RSKIA SADEWA Instrument : secondary data from medical record data, hospital service data and financial statements (2011- 2019) Analysis : quantitative methods	After the implementation of the JKN program, there was an increase in the number of patient visits by 35.23% for outpatients and 36.43% for inpatients. The percentage of inpatients who used health insurance before the JKN era was only around 3%, and after the JKN era the number increased sharply to 73%. BOR increased by 1.83%. The SC rate decreased by 0.83%. Of all general patients with Caesarean Section in RSKIA SADEWA, an average of 54.75% were BPJS participants, but aborted their BPJS rights. The average hospital revenue increased by 93.72%, operating costs decreased 5.78%, HR costs increased 1.52% and net profit increased 4.26%. The proportion of hospital revenue obtained from BPJS patients on average is 26.38% of the total hospital revenue. The average ROA after JKN era increased 5.96%. The average financial quick ratio increased by 443%. The average financial solvency decreased by 0.03. The

*Cucu Sutarsyah, Hery Yufrizal and Sudirman	Improving Writung English Performance through the applicaton of google classroom feedback at higher education institutions in Bandar lampung	Asian Journal of Science and Technology ,10-2019	Design : quantitatively and qualitatively Population : All student Sample : students' writing quality Variable : The independent variable of this research was Google Classroom-mediated feedback. Meanwhile, dependent variable is a variable the experimenter measures, after making changes Instrument : A writing task Analysis : T -Test	average CRR increased by 7%. the implementation of Google Classroommediated feedback on 'Write Art' Google Classroom Group affected student' writing quality positively. Based on the analysis of the students' feedback, it was found that the students presented positive, negative, and constructive feedback on their friends' writings
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CONCLUSION

The development of National Health Insurance continues to increase from year to year. The JKN program certainly aims to improve people's welfare and ensure life based on the principles of social insurance. Based on Law Number 37 of 2021 concerning the implementation of the Job Loss Guarantee Program, National Health Insurance is one of the guarantees in the form of health protection to obtain protection, maintenance and fulfillment of basic health needs provided to every person both in insurance contributions and health insurance contributions. paid by the Central Government or Regional Government. The stages in making a health plan are: (1) analyzing the goals and benefits that will be obtained, (2) analyzing and designing policies that can be supported by the services provided to the community and (3) analyzing the implementation of the strategies that will be used.

SUGGESTION

In this era of national health insurance, hospitals as health service providers must have the right strategy, understanding and agreement with all stakeholders to provide the best service to patients. In planning a hospital business strategy in the era of national health insurance, it must go through several stages, including analyzing the objectives and benefits to be obtained, analyzing policies supported by the health services provided, analyzing the strategies that will be implemented, and implementing operational service standards. which can improve service to patients and can improve the reputation of the hospital

REFERENCES

Adiyanta, FS (2020). The urgency of the Universal Health Coverage policy for the provision of

public health services during the Covid-19 pandemic. *Administrative Law and Governance Journal*, 3(2), 272-299.

Arso, M.A. (2020). Analysis of PT Tanabe Indonesia's Business Development Strategy in Facing the Era of National Health Insurance. *Journal of Business Management and Entrepreneurship*, 4(5), 173-177.

Hidayat, D., & Bachtiar, A. (2024). Analysis of Cost Control Management for Inpatient Services for BPJS Health Patients. *Syntax Idea*, 6(4), 1973-1982.

Irwandy, I., & Sjaaf, AC (2018). Impact of National Health Insurance Policy on Hospital Efficiency: Case Study in South Sulawesi Province. *Hasanuddin University Indonesian Public Health Media*, 14(4), 360-367.

Lestari, W., Trisnantoro, L., & Andayani, NLPEP (2021). Overview of hospital performance before and after the national health insurance (JKN) era. *Journal of Health Services Management*, 24(3).

Manita, R., & Afrita, I. (2024). Accessibility of Financing in the National Health Insurance Program. *Innovative: Journal Of Social Science Research*, 4(1), 12874-12886.

Mujiyanti, M. (2023). Implementation of Strategy Planning Using SWOT Analysis in Hospitals. *Journal of Accounting and Business Management*, 3(1), 174-181.

Ulandari, LPS, Ilyas, Y., & Indrayathi, PA (2021). Strategy for Implementing National Health Insurance using the Balanced Scorecard Method: Case Study at Hospital X Tangerang in 2018. *Indonesian Journal of Health Economics*, 5(2).

Waturandang, G., & Yoen, P. (2019). Analysis of the Harapan Jayakarta Hospital Business

- Strategy Plan Using a Balanced Scorecard Approach. Indonesian Journal of Hospital Management and Administration (MARSI), 3(2), 85-101.
- Sutarsyah, C., & Yufrizal, H. Sudirman. 2019." Improving Writing English Performance through The Application of Google Classroom Feedback at, 10352-10359.
- Permana, P., & Wijaya, GBR (2019). Analysis of risk factors for Low Birth Weight (LBW) babies in the Gianyar I Public Health (Kemas) Integrated Service Unit (UPT) in 2016-2017. Medical Science Digest, 10(3).

THE EFFECTIVENESS OF YOUNG BECAUSE SIMPLICIA FOR THE HEALING OF PERINEAL WOUNDS IN PUBLIC WOMEN

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ABSTRAK : EFEKTIVITAS SIMPLISIA BUAH PINANG MUDA DENGAN KESEMBUHAN LUKA PERINEUM PADA IBU NIFAS

Pendahuluan: Jumlah kematian ibu di Kota Medan pada tahun (2020), sebanyak 187 jiwa dari 299.198 kelahiran hidup, dengan Angka Kematian Ibu (AKI) sebesar 62,50 per 100.000 kelahiran hidup, artinya dari 100.000 kelahiran hidup 187 ibu meninggal saat kehamilan 62, bersalin 64, dan 61 kematian ibu nifas. Hampir dari 90% pada proses persalinan banyak ibu yang mengalami robekan perineum ,baik dengan sengaja maupun episiotomi.

Tujuan : penelitian ini untuk mengetahui Efektivitas Simplisia Buah Pinang muda Dengan Kesembuhan Luka Perineum Di Klinik Wanti Medan tahun 2023.

Metode : Penelitian ini menggunakan metode *True Experimental*, dengan pendekatan rancangan *Posttest Only Control Group Design*. Teknik pengambilan sampel dengan menggunakan *Population Sampling* dengan jumlah responden 20 ibu nifas mulai hari ke-1 postpartum dengan 10 orang sebagai kelompok intervensi dan 10 orang sebagai kelompok kontrol. Analisis data univariat dan bivariat.

Hasil : penelitian menunjukan bahwa hasil uji statistik dengan menggunakan uji *Mann Whitney*, diperoleh hasil perhitungan $p\text{-value} = 0,000 < \alpha 0,05$, berarti terdapat efektivitas yang signifikan menggunakan simplisia buah pinang muda dengan kesembuhan luka perineum. Kesembuhan terjadi lebih cepat pada kelompok intervensi yang dimana mengalami kesembuhan rata-rata <6 hari sebanyak 9 orang (90,0%) pada kategori cepat. Sedangkan pada kelompok kontrol rata-rata mengalami kesembuhan 6-7 hari sebanyak 6 orang (60,0%) pada kategori normal.

Kesimpulan : dalam penelitian ini adanya Efektivitas Simplisia Buah Pinang Muda Dengan Kesembuhan Luka Perineum Pada Ibu Nifas Di Klinik Wanti Medan Tahun 2023. Disarankan tenaga kesehatan khususnya pelayanan kebidanan di Klinik Wanti Medan, agar mendukung ibu untuk mengaplikasikan terapi komplementer simplisia buah pinang muda untuk mempercepat kesembuhan luka perineum.

Kata Kunci : Buah Pinang Muda, Luka Perineum

ABSTRAK

Background: The number of maternal deaths in Medan City in 2020 was 187 out of 299,198 live births, with a Maternal Mortality Rate (MMR) of 62.50 per 100,000 live births, meaning that out of 100,000 live births 187 mothers died during pregnancy, 62. 64 births, and 61 postpartum maternal deaths. Nearly 90% of mothers experience a perineal tear in the birth process, either intentionally or with an episiotomy. The aim of this research is to determine the effectiveness of young betel nut simplicia in healing perineal wounds at the Wanti Clinic in Medan in 2023. This research design uses the True Experimental method, with a Posttest Only Control Group Design approach. The sampling technique uses Population Sampling with a total of 20 mothers as respondents. postpartum starting on day 1 postpartum with 10 people as the intervention group and 10 people as the control group. Univariate and bivariate data analysis. The results of the research show that the results of statistical tests using the Mann Whitney test, obtained a p-value calculation of $= 0.000 < \alpha 0.05$, meaning that there is significant effectiveness of using young areca nut simplicia in healing perineal wounds. Healing occurred more quickly in the intervention group, where 9 people (90.0%) experienced healing on average <6 days in the fast category. Meanwhile, in the control group, an average of 6 people (60.0%) experienced recovery in 6-7 days in the normal category. The conclusion of this research is the effectiveness of young betel nut simplicia in healing perineal wounds in postpartum mothers at the Wanti Clinic in Medan in 2023. It is recommended that health workers, especially midwifery services at the Medan Wanti Clinic, support mothers in applying complementary therapy of young betel nut simplicia to speed up wound healing. perineum.

Keywords: Young Areca Fruit Simplicia, Perineal Wounds

INTRODUCTION

The postpartum period is the period that the mother will go through after childbirth, which starts after the birth of the baby and placenta, namely after the end of the fourth stage of labor and ends up to 6 weeks (42 days) which is marked by the cessation of bleeding. The postpartum period comes from the Latin word *puer*, which means baby, and *paros*, which means to give birth, which means the recovery period, starting from childbirth until the reproductive organs return to the way they were before pregnancy (Nurul Azizah dan Rafhani Rosyidah, 2019).

Injury to the birth canal can occur intentionally, such as during an episiotomy. Incision wounds that are straight (even) are easier to repair and heal more quickly than lacerations that tear irregularly and uncontrollably. Nearly 90% of people in labor experience perineal tears, either accidentally or through episiotomy (Zeranika et al., 2022).

Perineal tears are tears that occur during labor and occur in almost all first or subsequent deliveries. Perineal care fulfills the need to nourish the area between the thighs bordered by the vulva and anus in the mother during the birth of the placenta until the organ returns to its pre-pregnancy state. Most perineal tears occur spontaneously or with episiotomy (Klinik et al., 2020).

Based on data from the World Health Organization (WHO) in 2020, around 75% of the direct causes of maternal death occur after giving birth, which is caused by infection and the postpartum period. Based on the 2019 Riskesdes in Indonesia, the MMR is still relatively high, namely 306 per 100,000 live births and in 2020 it will be 300 per birth. This figure is still far from the Sustainable Development Goals (SDGs) target of 70 per 100,000 live births in 2030. To achieve this target requires hard work, especially compared to several ASEAN countries, the MMR in Indonesia is still relatively high. MMR in ASEAN countries averages 40-60 per 100,000 live births (Organization, 2023).

According to the Indonesian demographic and health survey (SDKI) in 2022, the main causes of death among Indonesian mothers are (27%), eclampsia (23%), infection (11%), abortion (5%), prolonged labor (5%), embolism. obstetrics (3%), perineal complications (8%) (Indonesia, 2022).

Areca nut seeds contain alkaloids, flavonoids, saponins and tannins which can heal wounds, where alkaloid compounds are efficacious for wound bleeding, saponins and flavonoids act as antimicrobial and anti-inflammatory (Farmasi et al., n.d.).

According to the 2020 RI Indonesia Health Profile, in general there was an increase in MMR in

2020 of 4,627 maternal deaths in Indonesia compared to 2019, namely 4.22 people. The causes of the increase in the number of AKI in 2020 were caused by bleeding with 1,330 cases, hypertension in pregnancy with 1,110 cases, and circulatory system disorders with 230 cases. Efforts to accelerate the reduction of MMR can be made by ensuring that every mother has access to quality maternal health services, such as health services for pregnant women, birth assistance by trained health workers in health service facilities, postpartum care by trained health workers in health service facilities, postpartum care for mothers and babies, special care and referrals if complications occur, and family planning services including postnatal family planning. From 2007 to 2020, health service coverage for K4 pregnant women tends to increase. However, it decreased in 2020 compared to 2019, namely from 88.54% to 84.6%. This decrease is assumed to occur due to program implementation in areas affected by the COVID-19 pandemic (Profil Kesehatan Indonesia, 2020).

According to the 2020 North Sumatra Health Profile, the number of maternal deaths in Medan City (2020) was 187 out of 299,198 live births, with a Maternal Mortality Rate (MMR) of 62.50 per 100,000 live births, meaning that out of 100,000 live births 187 mothers died during pregnancy. 62, maternity 64, and 61 postpartum maternal deaths. The MMR in Medan City has decreased compared to the year (2019) when the number of maternal deaths was 202 out of 302,555 live births, with a Maternal Mortality Rate (MMR) of 66.76 per 100,000 live births. In general, the number of maternal deaths has decreased in the last 5 years, where in 2016 the number of maternal deaths was 235 people, decreased in 2017 and 2018, respectively to 205 people and 185 people, in 2019 it increased to 202 people, and decreased again in 2020 to 187 people from 299,198 live births (Profil Kesehatan Sumatera Utara, 2020).

Based on research conducted by Arif Azis et al regarding the activity of areca nut extract (*Areca catechu* L) on the healing of rabbit cut wounds in 2022, the results of the researchers showed that the group given areca nut ethanol extract could speed up the healing of rabbit cut wounds, namely with concentration. 7% compared with the group given Na-CMC and the group given nebacetin powder (Azis et al., 2022).

According to research conducted by Citra Sauma Ramadhan 2021 regarding the effectiveness of water boiled with young betel nut seeds and Kandis acid on pain intensity and wound healing in postpartum women. In 22 respondents, the results

showed that there were differences between the intervention group and the control group, where the research results showed that therapy using Boiled water from young areca nut seeds and kandis acid is effective for treating pain and accelerating the healing of perineal wounds in postpartum mothers (Citra Shauma Ramadhan, 2021) .

According to research conducted by Merry Hardiani 2019 on the Effect of Giving Chitosan Emulgel, Areca Seed Extract (Areca catechu. L) on Healing Burns in Rats, research results were obtained from the results of phytochemical screening of areca nut extract containing alkaloid, flavonoid, tannin and saponin compounds. The post hoc test results obtained an effective concentration with a significant value of 0.000 compared to negative control and the most effective concentration was obtained, namely 20% emulgel which was proven to reduce the area of burns (Merry Hardiani, 2019) .

The aim of this research is to determine the effectiveness of young betel nut simplicia in healing perineal wounds at the Wanti Clinic in Medan in 2023.

RESEARCH METHODS

This research uses a research design (True Experimental) with a Posttest Only Control Design approach. In this design, researchers measure the effect of treatment (intervention) on the experimental group by comparing it with the control group. This research was conducted at the Midwife Wanti Practice Clinic. The sample in this research was 20 people and divided into 2 groups. 10 people for the intervention group and 10 people for the control group. The postpartum mothers used were postpartum mothers on the first day who experienced grade I and II perineal wounds. The intervention group was given water boiled using 10 grams of dried young areca nut simplicia, then boiled for 15 minutes with 800 ml water, wait until it boiled until half the water remained or 400 ml, given for 8 days, while the control group just normal wound care.

RESEARCH RESULTS

Respondent Characteristics

The characteristics of the research subjects in this study included maternal age, parity and degree of injury with the following frequency distribution:

Table 1
Frequency Distribution Based on Age of Respondents in the Experimental Group and Control Group

Characteristics	Group			
	Intervention		Control	
	f	%	f	%
Age				
<20 Years	1	10,0	1	10,0
21-35 Years	9	90,0	9	90,0
Parity				
Primigravida	6	60,0	5	50,0
Multigravida	4	40,0	5	50,0
Degree of Perineal Wound				
Degree 1	3	30,0	3	30,0
Degree 2	7	70,0	7	70,0

Based on table 1, the frequency distribution above can be seen from the 20 respondents, the majority of mothers' age in the experimental group was 21-35 years as many as 9 respondents (90.0%) and the minority of mothers' age <20 years was 1 respondent (10.0%), Furthermore, the majority of mothers aged 21-35 years in the control group were 9 respondents (90.0%) and the minority aged <20 years was 1 respondent (10.0%). The majority of research respondents in the experimental group were 6 respondents (60%) in the primigravida category and the minority were 4 respondents (40.0%) in the multigravida category. Furthermore, the average parity in the research control group was 5 respondents (50.0%) with the primigravida

category and 5 respondents (50.0%) with multigravida pregnancy. The majority of the degree of injury of research respondents in the experimental group was 7 respondents (70.0%) in the grade 2 category and the respondents and minorities were 3 respondents (30.0%) in the category of grade 1. Furthermore, the majority of the degree of injury in the control group of the study was 7 respondents. (70.0%) in the 2nd degree category and 3 minority respondents (30.0%) in the 1st degree category.

Univariate Analysis

Perineal Wound Healing

Perineal wound healing in this study was categorized into 3 types, namely slow, fast, normal with the following frequency distribution:

Table 2
Frequency Distribution of the Effectiveness of Young Areca Fruit Simplisia in Healing Perineal Wounds in Postpartum Women

Periennial Wound Healing	Kelompok			
	Intervention		Control	
	F	%	f	%
Slow	-	-	4	40,0
Fast	9	90,0	-	-
Normal	1	10,0	6	60,0

Based on table 3, the frequency distribution of respondents is based on postpartum mothers who experienced perineal wounds who were given young areca nut simplisia and those who were not given young areca nut simplisia at the Wanti Medan clinic in 2023. It is known that of the 10 postpartum women who experienced fast wound healing, 9 respondents (90.0%) and normal wound healing in 1 person (10.0%). Meanwhile, postpartum mothers with perineal wound healing who were not given young

areca nut simplisia found that of the 10 respondents who experienced normal wound healing, there were 6 people (60.0%) and 4 people (40.0%) had slow wound healing.

Bivariate Analysis

Bivariate results are used to determine the influence between the independent variable and the dependent variable which are analyzed using the normality statistical test first.

Normality Test

Table 4
Normality Test Results

Giving Simplisia Young Areca Fruit	Shapiro- wilk		
	Statistic	Df	Sig
Giving	.366	20	.000

a. Lilliefors Significance Correction

In the normality test above, the Shapiro-Wilk value can be seen, namely the sig value ($p < 0.05$). Thus the data is not normally distributed, namely the next step is to use the Non-Parametric Test with the Man Whitney Test. Uji Non parametrik dengan Uji Mann Whitney

Table 5
Effectiveness of Young Areca Fruit Simplisia for Healing Perineal Wounds

Group	n	Mean Rank	Sum of Rank
Intervention	10	5.50	55.5
Control	10	15.50	155.00

Based on table 5, the mean rank or average recovery value in the intervention group was 5.50, while the number or positive rank or sum of ranks was 55.50. The mean rank value or average of the control group was 15.50, while the number of positive ranks or sum of rank was 155.00, so it can be concluded that the intervention group who were given young betel nut simplisia experienced faster recovery than the control group who were not given young areca nut simplisia.

Test Statistics^a

kelompok_Intervensi	
Mann-Whitney U	.000
Wilcoxon W	55.000
Z	-3.987
Asymp. Sig. (2-tailed)	.000
Exact Sig. [2*(1-tailed Sig.)]	.000 ^b

a. Grouping Variable: Kelompok

b. Not corrected for ties.

Based on the statistical test table above, it is known that the Mann Whitney U value is 0.000 and the Wilcoxon value or average deviation value between the intervention group and the control group is 55,000. If converted or changed to a Z value of -3.987, with an asymp sig (2-tailed) value of 0.000.

Because the value of 0.000 is smaller than <0.05 , it can be concluded that "Ha is accepted", meaning that there is a difference between the value of the length of recovery when given young areca nut simplicia and those who are not given young areca nut simplicia, so it can be interpreted that there is effectiveness of Young Pinang Fruit simplicia. "With Healing of Perineal Wounds in Postpartum Women at the Wanti Medan Clinic in 2023"

DISCUSSION

Effectiveness of Young Areca Fruit Simplicia for Healing Perineal Wounds at Klinin Wanti Medan in 2023

Based on research conducted at the Wanti Clinic in Medan in 2023, there were 20 respondents, with 10 people each given young areca nut simplicia and 10 people who were not given young areca nut simplicia. The statistical analysis of the Mann Whitney test was obtained, namely asymp sig (2-tailed) with a value of 0.000. Because the value of 0.000 is smaller than <0.05 , it can be concluded that "Ha is accepted", meaning that there is a difference between the value of the length of recovery when given young areca nut simplicia and those who were not given young areca nut simplicia, so it can be interpreted that there is effectiveness of young areca nut simplicia. With Healing of Perineal Wounds in Postpartum Women at the Wanti Clinic in Medan in 2023"

The distribution frequency of healing of perineal wounds in the group given young betel nut simplicia in this study experienced faster healing of perineal wounds, where the average healing was >6 days for 9 people (90.0%) precisely on the 4th and 5th day in the category fast and in the normal category, 1 person (10.0%) experienced recovery, precisely on day 6, compared to the control group, the average recovery occurred on day 6-7 with the normal category being 6 people (60.0%) people and in the <7 days category with 4 people (40.0%) in the slow category who experienced recovery on the 8th day.

Injury to the birth canal can occur intentionally, such as during an episiotomy. Incision wounds that are straight (flat) are easier to repair and heal more quickly than lacerations that tear irregularly and uncontrollably. Nearly 90% of births experience perineal tears, either intentionally or by episiotomy (Zeranika et al., 2022).

The process of healing perineal wounds is interrelated, starting from the process of reducing the size of the wound, followed by reducing the redness of the wound on the perineum of postpartum mothers, which initially turns dark red, changes to

pale red or fades from before. For 5 days, perineal wound treatment is carried out using fruit simplicia. matchmaker. Edema is a form of wound inflammation, in this process there is an increase in blood flow to the arteries to the damaged tissue which aims to transport plasma proteins and cells to the wound surface to prevent infection from entering. Wound healing can also be influenced by nutrition, cleanliness, adequate rest, age, stress, obesity, and infection (3).

Perineal care is to prevent infection in connection with tissue healing. Infection causes increased inflammation and necrosis which inhibits wound healing. The presence of foreign objects, extensive tissue exfoliation will slow healing and the tensile strength of the wound remains low. Because rough and wrong treatment can result in new blood capillaries being damaged and bleeding and wound healing stopping. The possibility of infection in wounds due to improper care can increase with the presence of inanimate and foreign objects (Olivia Trimonica, 2022).

Areca nut seeds contain alkaloid, flavonoid, saponin and tannin compounds which can heal wounds, where alkaloid compounds are efficacious for wound bleeding, saponins and flavonoids act as antimicrobial and anti-inflammatory. Meanwhile, tannin from areca nut seeds has an astringent effect which functions to minimize wounds. skin tissue so that bleeding can stop and wound healing can occur (Farmasi et al., n.d.).

The mechanism of action of alkaloids is by interfering with the peptidoglycan components in bacterial cells, so that the cell wall layer does not form completely and causes cell death. Flavoloid works by interfering with the activity of transpeptidase, peptidoglycan so that cell wall formation is disrupted and cells will experience lysis. Tannins work by denaturing proteins found in cell walls (Farmasi et al., n.d.).

This research is in line with research conducted by Citra Shauma Ramadhan 2021 regarding the effectiveness of boiled water from young areca nut seeds and kandis acid on pain intensity and perineal wound healing in postpartum mothers on 22 respondents, with a quasi-experimental research type with a pre post test approach with control group design consisting of 11 people as the intervention group and 11 people as the control group. The measuring instruments used were the NRS pain scale (Numerical Rating Scale) and the Souhampton scale and the Bates-Jensen wound continuity scoring. From the Mann-Whitney statistical test, there is a difference between the intervention group and the control group with P value

= 0.000, indicating that boiled water therapy with young betel nuts and kandis acid is effective for treating pain and accelerating the healing of perineal wounds in postpartum mothers. (Citra Shauma Ramadhan, 2021)

This research is in accordance with research conducted by Arief Azis et al in 2022 regarding the activity test of areca nut (*Areca catechu* L.) ethanol extract on the healing of rabbit (*Oryctolagus cuniculus*) incision wounds, using the 70% ethanol solvent extract method by dividing the group into 5 test groups. consisting of 3 test animals. Group I was given Na-CMC as a negative control group, group II was given areca nut ethanol extract with a concentration of 3%, group III was given areca nut ethanol extract with a concentration of 5%, group IV was given areca nut ethanol extract with a concentration of 7%. extract, and group V was given Nebacetin powder as a positive control. The results of the study showed that the group given 7% concentration of areca nut ethanol extract could accelerate wound healing in rabbit incisions with the results of the Anova statistical test obtaining a significance value of $P > 0.05$, namely $0.000 < 0.005$ (Azis et al., 2022).

In this study, the researchers assumed that regular administration of young betel nut simplicia in the right amount could accelerate the healing of perineal wounds in postpartum mothers. In this study, young areca nut simplicia was given twice a day, morning and evening, 400 ml by placing it in the perineal wound of postpartum mothers. . This is because young areca nut seeds contain alkaloid, flavonoid, saponin and tannin compounds which can heal wounds, where alkaloid compounds are efficacious for wound bleeding, saponins and flavonoids act as antimicrobial and anti-inflammatory. Meanwhile, tannin from areca nut seeds has a strong astringent effect. functions to minimize wounds in skin tissue so that bleeding can stop and wound healing can occur.

Young betel nut simplicia is a complementary treatment that can speed up wound healing. Wound healing can be influenced by several factors including the respondent's age and nutrition, where postpartum mothers with perineal wounds are of reproductive age (20-35 years) have cell mechanisms that work more quickly and effectively in wound healing and nutrition to increase the body's immune power. However, the mother's condition must also be healthy, both physically and mentally, which can also determine how long it will take for perineal wounds to heal. This can also be seen from the respondents' adherence to using young areca nut simplicia during the research. Judging from the

respondents in the group who were given young betel nut simplicia in this study, they experienced healing on average on the 4th and 5th day in the fast category and in the normal category healing occurred on day 6, compared to the control group who were not given fruit simplicia. Young areca nut with an average recovery occurs on day 6 and day 7 in the normal category and on day 8 in the slow category.

CONCLUSION

Frequency distribution of the length of healing of perineal wounds in postpartum mothers in the group given young betel nut simplicia in this study experienced faster healing of perineal wounds, where the average healing was >6 days for 9 people (90.0%) precisely on the 4th day and 5th in the fast category and in the normal category 1 person (10.0%) experienced recovery, to be precise on the 6th day, compared to the control group, the average recovery occurred on days 6-7 with 6 people in the normal category (60.0%) people and in the <7 days category with the slow category there were 4 people (40.0%) who experienced recovery on the 8th day. The results of statistical tests using the Mann-Whitney Test were Asymp. Sig (2 T-tailed) 0.000, this value is smaller than the P value (α) 0.005, indicating that there is significant effectiveness in administering young betel nut simplicia in healing perineal wounds in postpartum mothers.

SUGGESTION

It is hoped that the results of this research can provide input and increase the insight of postpartum mothers about young areca nut simplicia and the healing of perineal wounds in postpartum mothers.

REFERENCES

- Azis, A., Bulawan, L., Farmasi, A., Makassar, Y., & Pancasakti, U. (2022). *Jurnal Kesehatan Yamasi Makassar*. 6(2), 8–17.
- Citra Shauma Ramadhan. (2021). *Efektivitas Air Rebusan Biji Pinang Muda dan Asam Kandis terhadap Intensitas Nyeri dan Penyembuhan Luka Perineum pada Ibu Nifas*. Universitas Sriwijaya Indralaya.
- Farmasi, A., & Indonesia, P. (n.d.). *MUTU fisik sediaan krim ekstrak etanol biji pinang (areca catechu l .) Sebagai obat luka sayat dengan basis vanishing cream . Physical quality of cream of betel nut seed (Areca Catechu L .) As Incision Medicine With Vanishing Cream Base Noviani D . S .*, 1–11.
- Indonesia, S. D. K. (2022). *Survei Demografi Kesehatan Indonesia*. Jakarta.
- Klinik, D. I., Diana, S. R. I., Tahun, L., Hanum, R., &

- Liesmayani, E. (2020). *Efektivitas air rebusan daun binahong dengan kesembuhan luka perineum pada ibu nifas*. 11, 12–21.
- Merry Hardiani. (2019). *Pengaruh Pemberian Sediaan Emulgel Chitosan Ekstrak Biji Pinang (Areca Catechu.L) terhadap Penyembuhan Luka Bakar pada Tikus*. Sekolah Tinggi Ilmu Kesehatan Borneo Cendekia Medika.
- Nurul Azizah dan Rafhani Rosyidah. (2019). *Asuhan Kebidanan*. Sidoarjo, Jawa timur: UMSIDA Press.
- Olivia Trimonica, M. T. K. (2022). *Spray Lidah Buaya (Aloe Vera) untuk Menurunkan Tingkat Nyeri dan Mempercepat Penyembuhan Luka Perineum Ibu Nifas*. Manggelang, Jawa Tengah: Pustaka Rumah Cinta.
- Organization, W. H. (2023). *Trends in maternal mortality 2000 to 2020: estimates by WHO, UNICEF, UNFPA, World Bank Group and UNDESA/Population Division*. Swiss.
- Profil Kesehatan Indonesia. (2020). *Profil Kesehatan Indonesia*. Jakarta.
- Profil Kesehatan Sumatera Utara. (2020). *No Title*. Medan.
- Zeranika, N., & Indrayani, T. (2022). *Efektivitas Air Rebusan Daun Binahong terhadap penyembuhan Luka Perineum pada Ibu Nifas di Klinik MMC Kabupaten Tulang Bawang Lampung*. 5(1).

IDENTIFICATION OF VITAMIN C CONTENT IN RED GUAVA (*Psidium guajava* L) JUICE FOR TREATMENT OF ANEMIA IN PREGNANT WOMEN

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ABSTRAK: IDENTIFIKASI KANDUNGAN VITAMIN C DALAM JUS JAMBU MERAH (*Psidium guajava* L) UNTUK MENGATASI ANEMIA PADA IBU HAMIL

Latar Belakang: Organisasi Kesehatan Dunia WHO (Organisasi Kesehatan Dunia) 40% melaporkan kematian ibu di negara berkembang berhubungan dengan anemia pada kehamilan. Prevalensi anemia pada ibu hamil adalah 33-75% di negara berkembang. Kekurangan zat besi adalah penyebab umum anemia. Penyerapan zat besi dapat dicapai dengan memperbanyak kandungan makanan yang mengandung vitamin C seperti pada sayur dan buah salah satunya buah jambu biji merah.

Tujuan: identifikasi kandungan vitamin C pada jus *psidium guajava* l untuk pengobatan anemia pada ibu hamil

Metode: Jenis penelitian yang digunakan dalam penelitian ini adalah kuantitatif, penelitian ini hanya didasarkan pada fakta-fakta positif yang diperoleh di lapangan penelitian. Data berupa angka-angka yang telah dirumuskan digunakan sebagai informasi yang akurat dalam penelitian. Pembuatan dan identifikasi zat besi pada jus jambu biji dilakukan dalam 2 tahap. Pembuatan pertama, daun jambu biji dibuat jus dengan di blender dan disaring. Tahap kedua adalah identifikasi vitamin C dengan titrasi.

Hasil: Hasil penelitian menunjukkan bahwa jus jambu biji merah mengandung vitamin C yang ditunjukkan dari hasil uji laboratorium terbentuk larutan berwarna coklat kemerahan.

Kesimpulan: Identifikasi vitamin C pada sampel 100 ml jus jambu biji merah untuk mengatasi anemia pada ibu hamil. Diketahui sampel jus jambu biji merah mengandung 13,4% vitamin C.

Saran ibu hamil dapat menggunakan jus jambu biji merah dapat meningkatkan hemoglobin karena mengandung FE dan vitamin C

Kata Kunci : Anemia, ibu hamil, Jambu biji merah, vitamin C

ABSTRACT

Background: World Health Organization WHO (WHO) 40% of maternal deaths in developing countries are related to anemia in pregnancy. The prevalence of anemia among pregnant women is 33-75% in developing countries. Iron deficiency is a common cause of anemia. Absorption of iron can be achieved by increasing the content of diets containing vitamin C such as those in vegetables and fruit one of them is red guava fruit.

Objective: identification of vitamin C content in *psidium guajava* l juice for treatment of anemia in pregnant women

Method: The type of research used in this research is quantitative, this research is only based on positive facts obtained in the research field. Data in the form of numbers that have been formulated are used as accurate information in research. The manufacture and identification of iron in guava juice is carried out in 2 stages. The first manufacture, leaves make guava juice with in a blender and filtered. The second stage is identification of vitamin C with titrasi.

Results: The research results showed that red guava juice contained vitamin C, which was indicated by the results of laboratory tests which formed a reddish brown colored solution

Conclusion: Identification of vitamin C in a 100 ml sample of red guava juice for treating anemia in pregnant women. It was found that the sample of red guava juice contained 13.4% vitamin C. Suggestions for pregnant women to use red guava juice can increase hemoglobin because it contains FE and vitamin C

Keywords: Anemia , pregnant, Red guava, Vitamin C

INTRODUCTION

The success of the efforts made for Pregnancy is an exciting time that every woman looks forward to. Every pregnancy is a major event in life's meaning. This is a time of great awareness and change. Parents begin to see themselves, their partners, and the world differently. It takes nine months for a baby to grow and develop so that one year later the parents' lives remain almost the same as before pregnancy ((Abd Elhakeem Aboud, Abd Elwahab El Sayed, and Abdel-Fatah Ibrahim 2019). The 2018 Riskesdas results show that 68.9% of pregnant women in Indonesia suffer from anemia, the 2013 Riskesdas results were 37.1%, this shows that the incidence of anemia has increased over the five year period, between 2013 and 2018(Riskesdas 2018).

Anemia during pregnancy is one of the main causes of maternal and infant death (Uta et al. 2022). Pregnant women usually suffer from iron deficiency, thus providing only a small amount of iron to the fetus that is necessary for normal iron metabolism(Garzon et al. 2020)

Iron is necessary for the formation of hemoglobin and during pregnancy blood volume increases due to changes in the mother's body and the blood supply to the baby. Iron deficiency can cause developmental disorders and obstacles in the fetus and body and brain cells, fetal death in the womb, miscarriage, congenital defects, low birth weight (LBW) and anemia in babies.(Abu-Ouf and Jan 2015). Factors associated with the incidence of anemia in pregnant women are parity, age, antenatal care (ANC) visits, and iron (Fe) intake.(Abd Elhakeem Aboud, Abd Elwahab El Sayed, and Abdel-Fatah Ibrahim 2019).

One effort to prevent and treat anemia in pregnant women is to increase knowledge, change attitudes, and become positive through education about nutritional needs during pregnancy(Riezqy Ariendha, Pratiwi, and Hardaniyati 2019). Check pregnancy during pregnancy, give 90 iron tablets, check HB in semesters I and III, and immediately check Pregnancy If there are abnormal complaints (Hardaniyati, Ariendha, and Ulya 2021), get food according to the needs of pregnant women, increase knowledge and behavior of pregnant women and their families, process and provide food, and improve quality of Health and Nutrition Services (Bhadra and Deb 2020).

Complementary therapies are chosen to support conventional medical treatments or as alternative medicine(Lyndall Mollart, Virginia Stulz 2021). Beyond conventional medical treatment, it is chosen as a way to cure disease(Naghmeh Yazdi a

et al 2019). Nutrition in pregnancy is very important in ensuring the quality of the pregnancy and the baby to be born. The nutritional needs of pregnant women, including folic acid, vitamin B, and zinc, have been shown to influence fetal development early in life, even before women realize that they are pregnant (Nguyen et al. 2016).

Providing micronutrients during pregnancy is one of the prevention measures to reduce iron deficiency during pregnancy (Lassi et al. 2014). One step that can be taken to prevent anemia is by giving Fe tablets, improving the food menu that will be consumed. Such as increasing consumption of foods that contain lots of iron such as eggs, milk, liver, fish, meat, nuts, dark green vegetables, and fruits. Apart from that, you can add substances that facilitate the absorption of iron, such as vitamin C, orange juice and types of fruit such as red guava and beets. On the other hand, substances that inhibit iron absorption such as tea and coffee should be avoided(Simanullang 2022).

Non-pharmacological ways to treat anemia in pregnant women include giving boiled chicken eggs(Suheni, Indrayani, and Carolin 2020). As well as those from plants such as giving Moringa leaf juice and green beans which can increase the hemoglobin levels of pregnant women (Thenmozhi, Nirmala, and Subalakshmi 2020). There are also those who use orange extract, where consuming orange extract together with iron tablets can increase hemoglobin levels in pregnant women who suffer from anemia (Novelia et al. 2020). Consuming tomato juice and spinach juice can also affect hemoglobin levels in pregnant women in the third trimester(Carolin et al. 2023). Apart from that, there is also red guava fruit (*Psidium Guajava* Linn) which is a type of fruit that is rich in vitamin C and is good for helping the absorption of iron in the body. Apart from that, red guava fruit contains vitamins A, E, K, and contains phosphorus, calcium, potassium, protein and iron which are useful for maintaining immunity, preventing infection, helping relaxation and preventing anemia, while beets (*Beta Vulgaris*) contain vitamins A, B, C, carbohydrates, protein, fat and minerals such as iron, calcium and phosphorus (Yati et al. 2020). Where this fruit can help the process of iron absorption and help reduce the problem of anemia. *Beta Vulgaris* is an alternative treatment that contains iron so it can increase HB levels in the blood. Guava has a high vitamin C content, which is twice as much as sweet orange, only 49 mg per 100 g(Dahlan, Aulya, and Fetrisia 2023).

Ristica research analysis of differences in hemoglobin levels for anemic pregnant women before (pre -test) and after (posttest) administration

of Fe tablets and guava juice therapy, the highest intensity of hemoglobin levels in pregnant women with anemia in the pre- test data before administration of Fe tablet and guava juice therapy is highest Hb levels of 8.8 which belonged to the moderate anemia group, amounting to 5 people (14.3%), and in the post- test data after giving Fe Tablets and Guava Juice 100 grams per day processed in the form of juice, and consumed 2 times a day in the morning and evening for 14 consecutive days the highest was with an Hb level of 9.7 which was classified into the mild anemia group, amounting to 5 people (14.3%)(Ristica and Afni 2021)

The purpose of this study was to identify the vitamin C content in red guava juice as a treatment of anemia of pregnant women

RESEARCH METHODS

This research consists of two stages, namely making red guava juice and testing guava juice products made using 100 grams of ripe red guava, 100 cc cold water, juicer. Procedure to made is Clean the guava, Cut into several pieces., Put it in the juicer, add 100 cc of water, then blend, After that, strain to separate the fruit juice from the seeds, Guava juice is ready to be served and Put it in a glass/glass bottle then divide it into 2 parts (Noormindhawati, 2016) to be submitted to the Food Technology Laboratory of Mataram University. The manufacture of red guava

juice was carried out at the Mekar Permai, Mataram, , West Nusa Tenggara Province, while phytochemical screening was carried out at the Food Technology Laboratory of Mataram University.

Laboratory tests are used to obtain data on the presence/absence of vitamin C contained in red guava juice for treating anemia in pregnant women. Research Tools and Materials Vitamin C : Research tools Glassware, analytical balance (Ohaus P224), funnel, filter paper burette, and cuvette. Research materials Ascorbic acid (Merck), KIO₃ (Merck), Na₂S₂O₃ (Merck), I₂ (Merck), H₂SO₄ (Merck), starch (Merck), distilled water and red guava juice drink samples. Samples in packaged drinks are determined with a standardized iodine solution, namely by pipetting 10 mL of the sample solution and then placing it in an Erlenmeyer. Add 1.2 mL of 10% H₂SO₄ solution to the solution, add a few drops of 1% starch solution and titrate with standard I₂ solution until it turns blue, repeating 15 times. Then observe the color change in the test tube, if the reaction is positive a reddish brown color forms.

RESEARCH RESULTS

The results of research identifying the content of Vitamin C and Iron in Red Guava Juice for Treating Anemia in Pregnant Women can be seen in the following table: Table Testing the Vitamin C content in guava juice.

Tabel 1
Results of Identification of Iron Content in 100 ml of Red Guava Juice

Material	Logam	Reaktor	Observations	Conclusion	%
Red Guava Juice	Vitamin C	Titasi	Reddish brown	+ 13,4	

Based on the data from the table above, it was found that 100 g of red guava fruit that was processed into juice apparently contained vitamin C using the titration method by observing that the color formed was reddish brown and the positive result (+) was 13.4%.

DISCUSSIONS

Based on the data from the table above, it was found that 100 g of red guava fruit that was processed into juice apparently contained vitamin C using the titration method by observing that the color formed was reddish brown and the positive result (+) was 13.4%. Vitamin C plays a role in iron absorption by reducing Ferric becomes ferrous in the small intestine so it is easy absorbed. Vitamin C also improves the

absorption of substances iron from plant foods (non-heme)(Rista Andaruni and Nurbaety 2018). The large vitamin C content in Psidium guajava is very beneficial for the absorption of iron in the body so that it can increase hemoglobin (Indriyani et al. 2020). Where vitamin C functions to reduce ferrous iron (Fe³⁺) into ferrous (Fe²⁺) in the small intestine so that it is easily absorbed, the high vitamin C content in psidium guajava fruit juice accelerates the process of reducing ferric iron into ferrous(Fitriani, Panggayuh, and Tarsikah 2017). This is related to the pharmacokinetics of iron which states that Fe in the body is more easily absorbed in ferrous form. One of the substances that helps the process of absorbing Fe in the body is vitamin C contained

in red guava juice. This is because vitamin C can reduce ferric ions to ferrous ions so that the iron contained in them can be absorbed optimally by the body.

Red guava (*Psidium guajava* L.) is a fruit that is widely available and easy to find on the market and is often planted alone in the yard because the price is cheap, has superior content compared to other fruits, especially apples, with nutritional value in every part of the plant which is useful and multipurpose for humans (Widowati 2023). Red guava fruit contains fiber and important antioxidant capacity such as polyphenols, carotene and vitamin C. Red guava fruit is high in vitamin C, with a vitamin C content higher than papaya and 2 times more than orange fruit.

Red guava fruit also contains iron, vitamin A, calcium, and secondary metabolites such as anthocyanin, quercetin, carotenoids, polyphenols, flavonoids, lycopene, saponins, catechins, guajaverin, and guavin (Rachmaniar, Kartamihardja, and - 2018). Red guava is useful as anti-anemia, antioxidant, anti-inflammatory, maintaining the cardiovascular system and digestive tract (Bello et al. 2018). Red guava juice is used to increase hemoglobin levels because it contains AA which can form (Azizah, Dahlan, and Azzahroh 2024). Red blood cells in bone structures as well can also maintain hemoglobin. Previous research shows that giving guava juice to children with anemia every day up to 300 ml contains about 200 AA has increased Hb levels significantly. (Rahmadani, Puspita, and Wulandari 2020)

Research showed that giving red guava juice was proven to increase hemoglobin levels in pregnant women with anemia, where there was an increase of 3.1 g/dl (Wigati and Firdaus 2018). Based on the results of the food technology laboratory at the University of Mataram, it was found that red guava juice contains Vitamin C, which is indicated by observing that the color formed is reddish brown and the Fe content is indicated by the rotation of the red color.

Vitamin C is related to the pharmacokinetics of iron, as a promoter that helps the absorption of non-heme iron in the small intestine through the process of reducing ferric iron (Fe^{3+}) to ferrous (Fe^{2+}) so that it is easily absorbed and helps the release of iron from transferrin into body tissues and inhibits the formation of hemosiderin (blood proteins) which are difficult to mobilize in the liberation of iron and increase blood formation.

CONCLUSION

Based on the data from the table above, it was

found that 100 g of red guava fruit that was processed into juice apparently contained vitamin C using the titration method by observing that the color formed was reddish brown and the positive result (+) was 13.4%.

SUGESTIONS

It is recommended for the public, especially pregnant women, to prefer to consume 100 mg of red guava juice as an alternative choice in increasing hemoglobin levels during pregnancy.

REFERENCES

- Abd Elhakeem Aboud, Samia H, Hanan Abd Elwahab El Sayed, and Heba Abdel-Fatah Ibrahim. 2019. "Knowledge, Attitude and Practice Regarding Prevention of Iron Deficiency Anemia among Pregnant Women in Tabuk Region." *Available online www.ijpras.com International Journal of Pharmaceutical Research & Allied Sciences* 8(2): 87–97. www.ijpras.com.
- Abu-Ouf, Noran M., and Mohammed M. Jan. 2015. "The Impact of Maternal Iron Deficiency and Iron Deficiency Anemia on Child's Health." *Saudi Medical Journal* 36(2): 146–49.
- Azizah, Uswatun Awa, Febry Mutiariami Dahlan, and Putri Azzahroh. 2024. "Effect of Red Guava Juice Consumption on Hemoglobin Levels in Pregnant Women." 02(02): 127–33.
- Bello, Oluwakemi Adetutu, Opeyemi Isaac Ayanda, Oluwadurotimi Samuel Aworunse, and Babafemi Ibukun Olukanmi. 2018. "Pharmacognosy Reviews." 1(2).
- Bhadra, Preetha, and Atanu Deb. 2020. "A Review on Nutritional Anemia." *Indian Journal of Natural Sciences* 10(59): 18675–81. www.tnsroindia.org.in.
- Carolyn, Bunga Tiara, Vivi Silawati, Siti Nurendah, and Shinta Novelia. 2023. "The Effectiveness of Giving Fe Tablets with Tomato Juice on Hemoglobin Levels in Third Trimester Pregnant Women with Anemia." *Nursing and Health Sciences Journal (NHSJ)* 3(2): 184–87.
- Dahlan, Febry Mutiariami, Yenny Aulya, and Wiwit Fetrisia. 2023. "Hemoglobin Examination and Giving Guava Juice to Pregnant Women in Cibungbulang District, Bogor Regency." *Journal of Community Empowerment for Multidisciplinary (JCEMTY)* 1(1): 29–34.
- Fitriani, Yulia, Ardi Panggayuh, and Tarsikah. 2017. "Pengaruh Pemberian Jus Jambu Biji Terhadap Kadar HB Pada Ibu Hamil TM III Di Polindes Krebet Kec. Bululawang Kab.

- Malang." *Jurnal EDUMidwifery* 1(2): 79–86.
- Garzon, Simone, Patrizia Maria Cacciato, Camilla Certelli, Calogero Salvaggio, Maria Magliarditi, and Gianluca Rizzo. 2020. "Iron Deficiency Anemia in Pregnancy: Novel Approaches for an Old Problem." *Oman Medical Journal* 35(5): 1–9.
- Hardaniyati, Dian Soekmawaty Riezqy Ariendha, and Yadul Ulya. 2021. "Kepatuhan Kunjungan Antenatal Care Terhadap Sikap Dalam Deteksi Dini Komplikasi Kehamilan Pada Ibu Hamil." *Jurnal Kesehatan Qamarul Huda* 9(2): 100–105.
- Indriyani, Ratna, Aulia Aulia, Maulana Widi Andrian, and Emdat Suprayitno. 2020. "Pengaruh Konsumsi Sari Buah Jambu Merah Dan Madu Terhadap Kenaikan Nilai HB Pada Ibu Hamil Di Tempat Praktek Mandiri Bidan Muarofah Surabaya." *Wiraraja Medika: Jurnal Kesehatan* 10(1): 36–40.
- Lassi, Zohra S, Ayesha M Imam, Sohni V Dean, and Zulfiqar A Bhutta. 2014. "Preconception Care : Caffeine , Smoking , Alcohol , Drugs and Other Environmental Chemical / Radiation Exposure." *Reproductive Health* 11(Suppl 3): S6. <http://www.reproductive-health-journal.com/content/11/S3/S6>.
- Lyndall Mollart, Virginia Stulz, Maralyn Foureur. 2021. "Midwives Knowledge and Education/training in Complementary and Alternative Medicine (CAM): A National Survey Author Links Open Overlay Panel." *Complementary Therapies in Clinical Practice* 45.
- Naghmei Yazdi a et al. 2019. "Use of Complementary and Alternative Medicine in Pregnant Women: A Cross-Sectional Survey in the South of Iran." *Journal of Integrative Medicine* 17(6): 392–95.
- Nguyen, Phuong H., Melissa Young, Ines Gonzalez-Casanova, Hoa Q. Pham, Hieu Nguyen, Truong V. Truong, Son V. Nguyen, Kimberly B. Harding, Gregory A. Reinhart, Reynaldo Martorell, and Usha Ramakrishnan. 2016. "Impact of Preconception Micronutrient Supplementation on Anemia and Iron Status during Pregnancy and Postpartum: A Randomized Controlled Trial in Rural Vietnam." *PLoS ONE* 11(12): 1–16.
- Novelia, Shinta, Ariati Dewi, Sri Melinasari, Retno Widowati, and Bunga Tiara Carolin. 2020. "Iron and Orange Extract on Hemoglobin among Anemic Pregnant Women in Nusa Tenggara Barat in 2018." *Asian Community Health Nursing Research*: 8.
- Rachmaniar, Revika -, Haruman - Kartamihardja, and Merry - -. 2018. "PEMANFAATAN SARI BUAH JAMBU BIJI MERAH (Psidium Guajava Linn.) SEBAGAI ANTIOKSIDAN DALAM BENTUK GRANUL EFFERVESCENT." *Jurnal Sains dan Teknologi Farmasi Indonesia* 5(1).
- Rahmadani, Siti, Erlin Puspita, and Hesti Wulandari. 2020. "Health Notions , Volume 4 Number 6 (June 2020) The Influence of Giving Fe Tablets along with Guava Juice on The Increasing of Hb Levels in Pregnant Women in South Tangerang Region Health Center 166 | Publisher : Humanistic Network for Science and Technology Health Notions , Volume 4 Number 6 (June 2020) ISSN 2580-4936 167 | Publisher : Humanistic Network for Science and Technology." 4(6): 11–12.
- Riezqy Ariendha, Dian Soekmawaty, Yopi Suryatim Pratiwi, and Hardaniyati Hardaniyati. 2019. "Hubungan Tingkat Pengetahuan Tentang Anemia Dengan Kepatuhan Ibu Hamil Meminum Tablet Zat Besi Di Puskesmas Sengkol." *Jurnal Kesehatan Qamarul Huda* 7(2): 29–36.
- Riskesdas. 2018. "Laporan Riskesdas 2018 Kementerian Kesehatan Republik Indonesia." *Laporan Nasional Riskesdas 2018* 53(9): 154–65. <http://www.yankes.kemkes.go.id/assets/downloads/PMK No. 57 Tahun 2013 tentang PTRM.pdf>.
- Rista Andaruni, Nurul Qamariah, and Baiq Nurbaety. 2018. "Efektivitas Pemberian Tablet Zat Besi (Fe), Vitamin C Dan Jus Buah Jambu Biji Terhadap Peningkatan Kadar Hemoglobin (Hb) Remaja Putri Di Universitas Muhammadiyah Mataram." *Midwifery Journal: Jurnal Kebidanan UM. Mataram* 3(2): 104.
- Ristica, Octa Dwienda, and Rita Afni. 2021. "Giving Guava to Increase HB Levels in Anemic Pregnant Women at PMB Dince Safrina Pekanbaru." *Journal Of Midwifery And Nursing journal homepage* 3(1): 20–25.
- Simanullang, Ester. 2022. "Effect of Consumption Red Guava Juice to Increase Hemoglobin Levels in Pregnant Women." *Jurnal Aisyah : Jurnal Ilmu Kesehatan* 7(2): 677–80.
- Suheni, Reni, Triana Indrayani, and Bunga Tiara Carolin. 2020. "Pengaruh Pemberian Telur Ayam Ras Rebus Terhadap Peningkatan Kadar Hemoglobin Pada Ibu Hamil Di Puskesmas Walantaka Kota Serang." *Jakhkj* 6(2): 1–12.

- Thenmozhi, P, M Nirmala, and P Subalakshmi. 2020. "Moringa Oleifera Leaves Soup on Hemoglobin among Antenatal Mothers." 8(5): 103–7.
- Uta, Mihaela, Radu Neamtu, Elena Bernad, Adelina Geanina Mocanu, Adrian Gluhovschi, Alin Popescu, George Dahma, Catalin Dumitru, Lavinia Stelea, Cosmin Citu, Felix Bratosin, and Marius Craina. 2022. "The Influence of Nutritional Supplementation for Iron Deficiency Anemia on Pregnancies Associated with SARS-CoV-2 Infection." *Nutrients* 14(4): 1–11.
- Widowati, R. 2023. "Utilization of Various Honey, Fruits, and Vegetables to Increase Hemoglobin Levels in Pregnant Women with Anemia in Indonesia." *IOP Conference Series: Earth and Environmental Science* 1255(1).
- Wigati, Putri Wahyu, and Nikmatul Firdaus. 2018. "Pengaruh Pemberian Kombinasi Jus Bayam Dan Jambu Biji Terhadap Kadar Hemoglobin Pada Ibu Hamil Di Wilayah Kerja Puskesmas Balowerti Kota Kediri." *Journal for Quality in Women's Health* 1(2).
- Yati, Sri, Rizky Amelia, Dhita Aulia Octaviani, and Maya Erisna. 2020. "Effect of Guava Juice and Papaya Juice on Increasing the Hemoglobin Levels among Pregnant Women." *International Journal of Nursing and Health Services (IJNHS)* 3(6): 695–99. <https://ijnhs.net/index.php/ijnhs/article/view/347/216>.

**IMPLEMENTATION OF *TOTAL QUALITY MANAGEMENT* (TQM) ON CUSTOMER JOURNEY IN HOSPITALS:
LITERATURE REVIEW**

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**ABSTRAK : IMPLEMENTASI *TOTAL QUALITY MANAGEMENT* (TQM) PADA CUSTOMER JOURNEY DI
RUMAH SAKIT: TINJAUAN PUSTAKA**

Latar Belakang : Total Quality Management (TQM) adalah pendekatan manajemen untuk meningkatkan kualitas organisasi dengan fokus pada kepuasan pelanggan, diperkenalkan oleh tokoh seperti Deming, Juran, dan Ishikawa dalam manufaktur. Di rumah sakit, TQM diterapkan untuk meningkatkan kualitas layanan dan efisiensi operasional melalui partisipasi seluruh staf dalam perbaikan proses dan pengambilan keputusan berbasis data. Keterlibatan pasien sebagai pusat aktivitas juga ditekankan, dengan penggunaan survei kepuasan dan umpan balik untuk memastikan pelayanan yang memenuhi harapan pasien.

Tujuan: Menganalisis pengaruh implementasi Total Quality Management (TQM) terhadap customer journey di rumah sakit.

Metode : Penelitian ini menggunakan metode literature review untuk mengeksplorasi pengaruh implementasi Total Quality Management (TQM) terhadap customer journey di rumah sakit, dengan fokus pada identifikasi pertanyaan penelitian utama, strategi pencarian literatur, seleksi kriteria inklusi dan eksklusi, serta analisis dan sintesis data untuk mengidentifikasi temuan utama, tren, dan kesenjangan penelitian terkait (Snyder, 2019).

Hasil : Hasil dan pembahasan dari literature review ini menyoroti bahwa implementasi Total Quality Management (TQM) di rumah sakit berpotensi signifikan untuk meningkatkan customer journey dengan memperbaiki kualitas layanan dan kepuasan pasien secara keseluruhan.

Kesimpulan : Implementasi Total Quality Management (TQM) di rumah sakit dapat secara positif mempengaruhi customer journey dengan fokus pada peningkatan kualitas layanan dan kepuasan pasien.

Saran : Menggunakan pendekatan gabungan kualitatif dan kuantitatif untuk mendalami implementasi TQM di rumah sakit, dengan fokus pada pengaruhnya terhadap customer journey dan pengalaman pasien.

Kata kunci : Total Quality Management (TQM), customer journey, rumah sakit, kepuasan pasien.

ABSTRACT

Background . Total Quality Management (TQM) is a management approach aimed at improving organizational quality with a focus on customer satisfaction, introduced by figures such as Deming, Juran, and Ishikawa in manufacturing. In hospitals, TQM is applied to enhance service quality and operational efficiency through the participation of all staff in process improvement and data-driven decision-making. Patient engagement as the center of activities is also emphasized, using satisfaction surveys and feedback to ensure services meet patient expectations.

Objective : To analyze the impact of Total Quality Management (TQM) implementation on customer journey in hospitals.

Methods : This study employs a literature review method to explore the influence of Total Quality Management

(TQM) implementation on customer journey in hospitals, focusing on identifying key research questions, literature search strategies, criteria for inclusion and exclusion, and analyzing and synthesizing data to identify main findings, trends, and research gaps (Snyder, 2019).

Results : The results and discussion from this literature review highlight that implementing Total Quality Management (TQM) in hospitals has the potential to significantly enhance the customer journey by improving service quality and overall patient satisfaction.

Conclusion: Implementation of Total Quality Management (TQM) in hospitals can positively impact the customer journey by focusing on enhancing service quality and patient satisfaction.

Suggestion : Utilize a combined qualitative and quantitative approach to delve deeper into TQM implementation in hospitals, focusing on its influence on customer journey and patient experience.

Keywords : Total Quality Management (TQM), customer journey, hospitals, patient satisfaction.

INTRODUCTION

Total Quality Management (TQM) is a management approach that aims to improve quality in every aspect of an organization, with the main focus on customer satisfaction (Permana et al., 2021). This concept was first introduced in the manufacturing sector by figures such as W. Edwards Deming, Joseph Juran, and Kaoru Ishikawa. Over time, TQM principles have been adapted and applied widely in various sectors, including healthcare. Implementation of TQM in hospitals aims to improve service quality, operational efficiency and patient satisfaction (Balasubramanian, M. 2016).

In the context of health services, hospitals are complex institutions with various functions and departments that must work synergistically to provide the best service to patients. The customer journey in hospitals includes various stages, from registration, diagnosis, treatment, to discharge and post-treatment follow-up. Each stage in this journey is a critical point that can impact patient experience and satisfaction. Therefore, implementing TQM in hospitals is very important to ensure that every aspect of the customer journey runs smoothly and meets high quality standards (Babu and Thomas, 2020).

Implementing TQM in hospitals involves principles such as total involvement of all staff, focus on customers (patients), a systematic approach to improving processes, and measurement and analysis of data for evidence-based decision making. All staff, from top management to operational staff, must actively participate in quality improvement efforts (Alzoubi et al., 2019). This includes training and development, effective communication, and appreciation for innovation and continuous improvement (Alshourah, S., 2021).

One important aspect of TQM is the involvement of patients as the center of all activities. In this context, hospitals must strive to understand patient needs and expectations, and proactively strive to meet and even exceed these expectations. The use of patient satisfaction surveys, focus groups, and other feedback mechanisms is part of the TQM approach to ensure that patient voices are heard and form the basis for service improvement (Al-Shdaifat, EA, 2015).

This research aims to explore how the implementation of TQM can influence the customer journey in hospitals. By using the literature review method, this research will collect and analyze various studies that have been conducted previously. Literature review is an effective method for compiling a general overview of various relevant research findings, so that it can provide comprehensive insight and support managerial decisions based on evidence. Through this literature review, it is hoped that best practices and challenges faced in implementing TQM in hospitals can be identified.

Implementing TQM in hospitals can also bring various benefits, including increasing operational efficiency, reducing medical errors, increasing patient satisfaction, and improving financial performance (Tejanegara et al.,

2022). Previous studies show that hospitals that implement TQM effectively tend to have higher levels of patient satisfaction, shorter waiting times, and better clinical outcomes. However, TQM implementation also faces various challenges, such as resistance to change, limited resources, and the need for continuous training and development.

Overall, this research seeks to analyze the implementation of TQM affecting the customer journey in hospitals. With this analysis, it is hoped that it can provide practical recommendations for hospital management to optimize the patient experience through effective implementation of TQM. It is hoped that the findings from this research can make an important contribution to improving the quality of health services and patient welfare in hospitals.

RESEARCH METHODS

This research uses a literature review method to explore the implementation of Total Quality Management (TQM) on the customer journey in hospitals. The first step in this process was to identify the main research question, namely "How does TQM implementation affect the customer journey in hospitals?" This question is the basis for determining inclusion and exclusion criteria for the literature to be reviewed. The literature search strategy involved the use of various academic databases such as PubMed, ScienceDirect, Google Scholar, and

ProQuest, with keywords such as "Total Quality Management", "TQM", "customer journey", "hospital", "healthcare", "patient satisfaction", and "quality improvement". Articles and dissertations included must have been published within the last 10 years, focus on the implementation of TQM in hospitals or health services, and discuss the impact on the customer journey or related aspects. The literature selection process begins with reading the title and abstract, followed by full selection by two independent researchers to reduce bias. Data were extracted using a standard format that included information such as title, author, year of publication, research methods, main findings, and study limitations. The extracted data is then analyzed and synthesized to identify key themes, trends and research gaps. The results of the literature review are arranged systematically, with the main findings, practical implications, and recommendations for further research clearly presented (Snyder, 2019).

RESULTS AND DISCUSSION

After conducting a literature search and selection according to the method described, several articles and dissertations were found that were relevant to the implementation of Total Quality Management (TQM) in hospitals and its impact on the customer journey. These studies come from different countries and show variations in implementation methods as well as results obtained. From the analyzed literature, several main findings related to the implementation of TQM in hospitals include:

Increased Patient Satisfaction: Most studies report that implementing TQM has a positive impact on patient satisfaction. The use of patient satisfaction surveys, direct feedback, and patient involvement in the quality improvement process have improved the patient experience throughout their hospital journey. Lupioyadi (2016) states that satisfaction is a patient's response to the discrepancy between their previous level of interest and the actual performance they feel after use. A patient's satisfaction will influence a person's behavior, so that when a patient is satisfied it will tend to lead to loyalty.

Operational Efficiency: Implementation of TQM has also been proven to increase hospital operational efficiency. Using a systematic approach to process improvement, waste reduction, and resource optimization has reduced lead times, improved coordination between departments, and reduced operational costs. Process management plays a role in improving quality by using prevention and control mechanisms that ensure that production and operational processes run as error-free as

possible (Baird et al., 2011; Purbowo & Waluyowati, 2022). Effective process management helps achieve significant productivity and flexibility in operational performance (Baird et al., 2011). This research found a significant positive relationship between process management and operational performance, including inventory and quality control performance.

Quality of Service: TQM contributes to improving the quality of medical and non-medical services in hospitals. Continuous training of staff, use of standardized protocols, and ongoing monitoring of service performance have improved clinical outcomes and patient satisfaction. This includes the use of digital technology to make it easier for patients to access information related to health services (Hendrani and Gorda, 2021).

Staff Involvement: Studies show that active involvement of all levels of staff in the TQM process is essential. Staff participation in the development and implementation of quality improvement initiatives increases their motivation and commitment to organizational goals. Employee performance is reflected in the quality of service they provide to patients, which can then be used to evaluate the quality of that service. The key to providing better quality service is to meet or exceed expectations for the service itself. Syaifullah (2018) states that service quality is the expected level of excellence and mastery of the level of excellence to meet needs. According to Erri (2017), service quality is provided to customers in accordance with service standards implemented as guidelines for service provision. One of the determining factors for satisfaction is the perception of service quality which focuses on five dimensions: level of responsiveness, reliability, confidence, empathy, and direct evidence (Rizkan A., Konadi W., Musrizal; 2023). Furthermore, Aji's research (2018) states that employee performance as an intervening variable is able to mediate the influence of TQM on customer satisfaction.

Data Measurement and Analysis: The use of data for decision making is a key component in TQM. Studies show that hospitals that successfully implement TQM use data effectively to identify areas for improvement, monitor progress, and evaluate results (Agiwuhyanto et al., 2021).

The results of this literature review show that the implementation of TQM in hospitals has a significant impact on the customer journey and service quality. Increased patient satisfaction is one of the most prominent outcomes, indicating that the patient-centered approach in TQM is highly effective. Patients who feel heard and included in the care process tend to have more positive experiences and higher levels of satisfaction.

Improved operational efficiency was also an important finding. TQM helps hospitals identify and eliminate inefficient processes, reduce waste, and optimize the use of resources. This not only reduces costs but also speeds up services, which is especially important in the often busy and stressful hospital environment.

Improving the quality of medical and non-medical services shows that TQM can be applied holistically throughout the organization. Ongoing training and use of standard protocols ensures that staff have the knowledge and skills necessary to provide high-quality services. In addition, active involvement of staff in the TQM process increases the sense of ownership and responsibility for service quality.

The use of data for decision making is a critical aspect of TQM. Studies show that hospitals that use data effectively can identify problems more quickly, track progress, and make evidence-based decisions for continuous improvement. This shows the importance of strong information systems and an organizational culture that supports the use of data.

However, challenges in implementing TQM also need to be considered. Resistance to change, limited resources, and the need for ongoing training are frequently encountered barriers. Hospital management needs to develop effective strategies to address these challenges, including involving all levels of staff, providing adequate resources, and ensuring that ongoing training is available.

RESULT RESULTS

Author	Title	Journal name	Method (design, population, sample, variables, instruments, analyses)	Results
Reinold Glory Masinam, Merlyn	Analysis Of The Application Total Quality Management In	Journal of Economic, Management, Business and	Descriptive qualitative	The implementation of Total Quality Management at Siloam GMIM Sonder Hospital has quality standards in service,
Mourah Karuntu	Siloam Gmim Sonder Hospital	Accounting Research ,		way to assess patient satisfaction is contact advice and training to improve service
Najamuddin, Achmad Indra Awaluddin, Haslinah Ahmad, Nurmiati Aminuddin	Implementation of Total Quality Management at Hospital	The Indonesian Journal of Health Promotion	DESIGN: cross sectional POPULATION: 314 people with 67 doctors, 140 paramedics and 65 other health workers . SAMPLE: 286 VARIABLE: hospital performance. INSTRUMENT: questionnaires, interviews and observations ANALYSIS: univariate	Based on MNQA calculations, Hospital Therefore, proactive planning needs to be made and implemented, not just reactive to problems.
Made Wahyu Adhiputra	Analysis of the Implementation of	Accounting scientific journal	DESIGN: POPULATION:	the application of TQM to Managerial Performance has

	TQM on Managerial Performance at General Hospitals in Denpasar		managers from all levels at the management level, consisting of upper, middle and lower level managers at the General Hospital in Denpasar . SAMPLE: managers at the General Hospital in Denpasar VARIABLE: hospital managerial performance. INSTRUMENT: questionnaire ANALYSIS: multiple regression	a significant effect of t at $0.023 < 0.05$, indicating that the first hypothesis is accepted. Second, the interaction of TQM implementation and the Performance Measurement System on Managerial Performance has a significant effect of t at $0.037 < 0.05$, indicating that the second hypothesis is accepted. And third, the interaction of TQM implementation and the Reward System on Managerial Performance has a significant effect of t at $0.042 < 0.05$, indicating that
Rohmad Kafidzin	Analysis of the Implementation of Total Quality Management (Tqm) of Inpatient Services at Kumalasiwi Mijen Kudus Hospital	Doctoral dissertation, Diponegoro University	DESIGN: Importance Performance Analysis POPULATION: 30 people consisting of directors, field heads, section heads, room heads and installation heads . SAMPLE: 15 people VARIABLE: hospital managerial performance. INSTRUMENT: questionnaire ANALYSIS: critical success factor	IPA evaluation showed that scientific approach and involvement and empowerment of employees were on concentration quadrant; focus on customer, obsession with quality, education and training, and unity of purpose were on excessive quadrant; repairs continuous system was on low concentration quadrant; and finally long-term commitment, teamwork, freedom of control were on over quadrant.
Hasrun Oganda	Analysis of Integrated Quality Management at Pringsewu Regional General Hospital	Journal of Public Policy and Services ,	The research method used is classified as descriptive type using qualitative analysis.	The research results show that the implementation of total quality management at Pringsewu General Hospital is quite good. Services provided by Pringsewu General Hospital to patients who meet minimum service standards. Several factors that hinder the implementation of integrated quality management at the Pringsewu Regional General Hospital are limited personnel, maintenance of facilities and infrastructure, and low public awareness in maintaining
Ilham ARIEF, Any SETIANING	Implementation of Total Quality Management	Journal of management economics and	DESIGN: Quantitative descriptive POPULATION: all	Yarsi Dental and Oral Hospital in total has an average of 82.00% regarding the

RUM	(TQM) Leader for Dental and Oral Hospital Patient Satisfaction in Jakarta	accounting	hospital workers . SAMPLE: 50 people VARIABLES: age, gender, time worked, education. . INSTRUMENT: questionnaire ANALYSIS: descriptive	implementation of TQM Leader. The TQM Leader variable that received the greatest response was in terms of teamwork, namely 88.00%.
Farah iChalida iHanoum iTejanagara1, Fajar Gumilang Kosasih2, Ratna Tri Hari Safariningsih 3	Implementation of Total Quality Management (TQM) in Improving the Quality of Hospital Services	Religion Education Social Laa Roiba Journal	DESIGN: Quantitative descriptive POPULATION: 90 nurses in the inpatient room. SAMPLE: 90 nurses in the inpatient room. VARIABLE: teamwork, training, education and empowerment of nurse performance. . INSTRUMENT: questionnaire ANALYSIS: descriptive	Reliable medical personnel supported by quality service and the purchase of medical equipment can improve the quality of hospital services. Apart from that, partnership opportunities such as investors also have a big impact on improving the quality of hospital management.
Riyanti Aprilia Fitriani	The Effect of Implementing Total Quality Management (TQM) on Financial Performance in Hospitals in Surabaya	Doctoral dissertation, STIE Perbanas Surabaya	DESIGN: Quantitative descriptive POPULATION: Hospitals in Surabaya . SAMPLE: financial manager . VARIABLE: customers, leadership, human resource management, management processes, strategic planning, information and analysis, incentive and recognition systems, and continuous improvement. Meanwhile the dependent variable in this research is financial performance INSTRUMENT: questionnaire ANALYSIS: descriptive	customer focus has an effect on financial performance, leadership has an effect on financial performance, human resource management has no effect on financial performance, management processes have no effect on financial performance, strategic planning has no effect on financial performance. performance, information and analysis influence financial performance, incentive and recognition systems influence financial performance, and continuous improvement influences financial performance.
David Toar William Wanget ,	Evaluation of Operational Management of	Journal of Economic, Management,	DESIGN: descriptive analysis POPULATION: all	The operational activities of non- medical personnel at the

Arrazi Hasan Jan , Jessy J. Pondaag ,	Non-Medical Workers Using the Total Quality Management Approach at Gmim Kalooran Amurang Hospital	Business and Accounting Research	employees or workers who work or carry out operational activities at GMIM Kalooran Amurang Hospital . SAMPLE: h workers or management who know the course of hospital operational activities VARIABLE: teamwork, employee performance. . INSTRUMENT: questionnaire ANALYSIS: descriptive	GMIM Kalooran Amurang Hospital have fulfilled the indicator elements of Total Quality Management through various improvements and the hospital's participation in accreditation activities, this is demonstrated by findings from data from interviews conducted. This can certainly ensure that the quality of service at the hospital can be maintained and trusted. Hospitals should also continue to
Kurnia Deswita , Herman Sudirman, and Sri Widodo.	Analysis of Efforts to Improve Service Quality by Applying the Total Method Quality Management (TQM) at Hospital	Indonesian Public Health Research and Development Journal	DESIGN: qualitative descriptive analysis POPULATION: all employees or workers who work or carry out operational activities at GMIM Kalooran Amurang Hospital . SAMPLE: h workers or management who know the course of hospital operational activities VARIABLE: teamwork, employee performance. . INSTRUMENT: questionnaire ANALYSIS: descriptive	Management support in efforts to improve service quality has been carried out in full, of the 10 elements of implementing Total Quality Management (TQM), only the long-term commitment element in terms of dissemination of strategic plans has not been carried out optimally, the application of ten TQM characteristics is an indication of good service provided by Rumah Hospital X always provides services in accordance with expectations

CONCLUSION

Overall, the findings from this literature review provide comprehensive insight into how TQM can be applied in hospitals to improve customer journeys and service quality. Practical recommendations for hospital management include strengthening patient and staff involvement, using data for decision making, and developing strategies to overcome barriers to TQM implementation. With the right approach, TQM can be a powerful tool for improving the quality of health services and patient welfare in hospitals.

SUGGESTIONS

Developing a TQM Implementation Model: Further studies can develop a specific model or framework for implementing TQM in the hospital environment, with a focus on its impact on the customer journey. This may include effective

implementation strategies, relevant performance measurements, and methods of evaluating the impact on patient satisfaction.

Deeper Analysis of Customer Journey Dimensions: Conduct a deeper analysis of customer journey dimensions such as patient experience, service satisfaction and patient loyalty. This research can identify key factors that influence patient perceptions of the quality of service received.

Comparative Study between Hospitals: Conduct a comparative study between several hospitals to compare their TQM implementation on the customer journey. This can provide a broader understanding of variations in practice and outcomes obtained in different hospital contexts.

REFERENCES

- Adhiputra, MW (2018). Analysis of the application of TQM to managerial performance at public hospitals in Denpasar. *Accounting Scientific Journal*, 3(1).
- Agiwahyunto, F., Octaviasuni, S., & Fajri, MUN (2019). Analysis of the Implementation of Total Quality Management (TQM) in Pending Cases of National Health Insurance (JKN) Claims at Kendal Hospital in 2018. *Indonesian Health Management Journal*, 7(3), 171-180.
- Aji Prabowo, S. (2018). The Influence of Store Atmosphere, Service Quality, Trust and Price Perception on Consumer Repurchase Intentions at Mirota Kampus Godean. *Dewantara Ecobis Journal* 1(7)
- Al-Shdaifat, EA (2015). Implementation of total quality management in hospitals. *Journal of Taibah University Medical Sciences*, 10(4), 461-466.
- Alshourah, S. (2021). Total quality management practices and their effects on the quality performance of Jordanian private hospitals. *Management Science Letters*, 11(1), 67-76.
- Alzoubi, MM, Hayati, KS, Rosliza, AM, Ahmad, AA, & Al-Hamdan, ZM (2019). Total quality management in the health-care context: integrating the literature and directing future research. *Risk management and healthcare policy*, 167-177.
- Arief, I., & Setianingrum, A. (2023). Implementation of Total Quality Management (TQM) Leader for Dental and Oral Hospital Patient Satisfaction in Jakarta. *JEMSI (Journal of Economics, Management and Accounting)*, 9(1), 125-131.
- Arief, I., & Setianingrum, A. (2023). Implementation of Total Quality Management (TQM) Leader for Dental and Oral Hospital Patient Satisfaction in Jakarta. *JEMSI (Journal of Economics, Management and Accounting)*, 9(1), 125-131.
- Babu, F., & Thomas, S. (2020). The relationship between total quality management practices and organizational image in the hospital industry: An empirical examination. *International Journal of Productivity and Quality Management*, 29(1), 1-23.
- Baird, K., Jia Hu, K., & Reeve, R. (2011). The Relationships Between Organizational Culture, Total Quality Management Practices And Operational Performance. *International Journal Of Operations & Production Management*, 31(7), 789–814
- Balasubramanian, M. (2016). Total quality management [TQM] in the healthcare industry—challenges, barriers and implementation developing a framework for TQM implementation in a healthcare setup. *Science Journal of Public Health*, 4(4), 271-278.
- Deswita, K., Sudirman, H., & Widodo, S. (2021). Analysis of Efforts to Improve Service Quality by Implementing Total Quality Management (TQM) Methods at Hospital X. *Indonesian Public Health Research and Development Journal*, 2(1), 37-48.
- Erri, D., & Arlin. (2017). The Influence of Health Service Quality on Patient Satisfaction of BPJS Participants at Hermina Daan Mogot Hospital, Jakarta. *National Symposium on Science and Technology*, 1(1)
- Fitriarini, RA (2015). The Effect of Implementing Total Quality Management (TQM) on Financial Performance in Hospitals in Surabaya (Doctoral dissertation, STIE Perbanas Surabaya).
- Hendrani, DH, & Gorda, AES (2021). Implementation of the TQM Rati Model in Hospital Health Services in the Era of Industrial Revolution 4.0. *Bali Health Journal*, 5(1), 1-13.
- Kafidzin, R., Yuniawan, A., & RAHARDJO, ST (2016). Analysis of the implementation of total quality management (TQM) inpatient services at Kumalasiwi Mijen Kudus Hospital (Doctoral dissertation, Diponegoro University).
- Masinambow, RG, & Karuntu, MM (2019). Analysis of the Implementation of Total Quality Management at Siloam Gmim Sonder Hospital. *EMBA Journal: Journal of Research in Economics, Management, Business and Accounting*, 7(1).
- Najamuddin, N., Indra Awaluddin, A., Ahmad, H., & St Aminuddin, N. (2023). Implementation of Total Quality Management at Hospital
- Oganda, H. (2017). Analysis of Integrated Quality Management at Pringsewu Regional General Hospital. *Journal of Public Policy and Services*, 3(2), 22-34.
- Permana, A., Purba, HH, & Rizkiyah, ND (2021). A systematic literature review of Total Quality Management (TQM) implementation in the organization. *International Journal of Production Management and Engineering*, 9(1), 25-36.
- Pratiwi, PM, & Wahyuningsih, W. (2023). ANALYSIS OF TOTAL QUALITY MANAGEMENT PRACTICES ON THE OPERATIONAL PERFORMANCE OF PRIVATE HOSPITALS.

- Scientific Journal of Educational Vehicles, 9(18), 578-595.
- Purbowo, D., & Waluyowati, NP (2022). The Effect Of Leadership On Operational Performance: The Mediating Role Of Quality Improvement. *International Journal Of Research In Business And Social Science* (2147- 4478), 11(1), 108–116
- Rizkan A. & Konadi W., Musrizal (2023). Analysis of Patient Satisfaction based on aspects of Service Quality and Interpersonal Communication (Study on Patients at Datu Beru Takengon Hospital, Central Aceh), *Indomera*, 4(8)
- Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of business research*, 104, 333-339.
- Syaifullah, & Mira. (2018). The Influence of Brand Image and Service Quality on PT Pegadaian Batam Customer Satisfaction. 6(2).
- Tejanagara, FCH, Kosasih, FG, & Safariningsih, RTH (2022). Implementation of Total Quality Management (TQM) in Improving the Quality of Hospital Services. *SIAM International Journal*, 1(01).
- Wanget, D.T.W., Jan, A.H., & Pondaag, J.J. (2018). Evaluation of Operational Management of Non-Medical Workers Using the Total Quality Management Approach at Gmim Kalooran Amurang Hospital. *EMBA Journal: Journal of Economic, Management, Business and Accounting Research*, 6(4).

IMPLEMENTATION OF TOTAL QUALITY MANAGEMENT (TQM) TO REDUCE PATIENT COMPLAINTS IN HOSPITALS: LITERATURE REVIEW

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ABSTRAK : IMPLEMENTASI *TOTAL QUALITY MANAGEMENT* (TQM) UNTUK MENGURANGI KELUHAN PASIEN DI RUMAH SAKIT: *LITERATURE REVIEW*

Latar Belakang : Kualitas pelayanan kesehatan di rumah sakit sangat berpengaruh terhadap kepuasan pasien, yang semakin meningkat dengan ekspektasi masyarakat modern. Total Quality Management (TQM) adalah pendekatan sistematis yang diterapkan untuk meningkatkan kualitas secara menyeluruh di berbagai sektor, termasuk kesehatan. Implementasi TQM melibatkan seluruh anggota organisasi rumah sakit dengan fokus pada peningkatan proses, produk, dan layanan kepada pasien. Penurunan komplain pasien menjadi indikator penting keberhasilan TQM, dengan upaya seperti perbaikan proses pendaftaran dan peningkatan komunikasi staf medis-pasien berpotensi mengurangi keluhan.

Tujuan: untuk melakukan tinjauan literatur tentang implementasi Total Quality Management (TQM) di rumah sakit dan menganalisis dampaknya terhadap penurunan komplain pasien.

Metode : Penelitian ini menggunakan metode literature review untuk mengeksplorasi pengaruh implementasi Total Quality Management (TQM) terhadap komplain di rumah sakit.

Hasil : Hasil penelitian menunjukkan bahwa implementasi Total Quality Management (TQM) di rumah sakit secara signifikan mengurangi jumlah komplain pasien. Berbagai strategi TQM seperti perbaikan proses pendaftaran, peningkatan kecepatan dan akurasi diagnosis, serta pelatihan staf dalam keterampilan komunikasi telah terbukti efektif. Studi juga menyoroti pentingnya evaluasi dan analisis komplain pasien sebagai sarana untuk terus memperbaiki kualitas pelayanan kesehatan dan meningkatkan kepuasan pasien secara keseluruhan.

Kesimpulan : Implementasi Total Quality Management (TQM) di rumah sakit terbukti efektif dalam menurunkan komplain pasien dan meningkatkan kepuasan pelanggan. Pentingnya keterlibatan seluruh anggota organisasi, fokus pada kepuasan pelanggan, dan peningkatan kualitas layanan secara berkelanjutan membentuk lingkungan pelayanan yang lebih responsif terhadap kebutuhan pasien..

Saran : meningkatkan implementasi TQM meliputi komitmen manajemen yang kuat, pelatihan staf, evaluasi rutin, dan budaya inovasi untuk memastikan kualitas layanan yang optimal.

Kata kunci : Total Quality Management (TQM), komplain, rumah sakit, kepuasan pasien.

ABSTRACT

Background. The quality of healthcare services in hospitals significantly influences patient satisfaction, which is increasingly heightened by modern societal expectations. Total Quality Management (TQM) is a systematic approach applied to enhance overall quality across various sectors, including healthcare. TQM implementation involves engaging all hospital organizational members with a focus on improving processes, products, and patient services. Reduction in patient complaints serves as a crucial indicator of TQM success, with efforts such as improving registration processes and enhancing communication between medical staff and patients potentially reducing grievances.

Objective: To conduct a literature review on the implementation of Total Quality Management (TQM) in hospitals and analyze its impact on reducing patient complaints.

Methods: This study employed a literature review method to explore the influence of Total Quality Management (TQM) implementation on complaints in hospitals.

Results: Findings indicate that TQM implementation in hospitals significantly reduces the number of patient complaints. Various TQM strategies such as improving registration processes, enhancing speed and accuracy of diagnoses, and training staff in communication skills have proven effective. The studies also underscore the

importance of evaluating and analyzing patient complaints as a means to continually improve healthcare service quality and enhance overall patient satisfaction.

Conclusion: Implementation of Total Quality Management (TQM) in hospitals has proven effective in reducing patient complaints and enhancing customer satisfaction. The importance of engaging all organizational members, focusing on customer satisfaction, and continuously improving service quality shapes a healthcare environment more responsive to patient needs.

Suggestion: Enhancing TQM implementation includes strong management commitment, regular staff training, routine evaluations, and fostering an innovative culture to ensure optimal service quality.

Keywords: Total Quality Management (TQM), complaints, hospitals, patient satisfaction.

INTRODUCTION

The quality of health services in hospitals is a crucial aspect that greatly influences patient satisfaction and experience (Supartiningsih, 2017). In this modern era, with increasing public awareness and expectations of health services, hospitals are required to continue to innovate and improve the quality of their services (Yanuarti et al., 2021). One management approach that is widely adopted by hospitals to achieve operational excellence and customer satisfaction is Total Quality Management (TQM) (Tejanegara et al., 2022).

Total Quality Management (TQM) is a systematic and structured management approach that focuses on overall and continuous quality improvement in every aspect of the organization. This concept was first developed in the manufacturing industry, but over time, TQM principles have been adapted to various sectors, including the health sector (Hendrani, DH, & Gorda, AES, 2021). Implementing TQM in hospitals involves the involvement of all members of the organization, from top management to operational staff, with the aim of improving processes, products and services provided to patients (Purwanti, 2024).

Implementation of TQM in hospitals can include various strategies and methods, such as quality control, performance measurement, employee training and development, as well as process improvement through the Plan-Do-Check-Act (PDCA) cycle (Sugiat, AP, & Atmawinata, MR, 2023). This approach emphasizes the importance of customer orientation, in this case patients, as the main focus. Every activity and decision taken must be based on the patient's needs and expectations, with the ultimate goal of increasing patient satisfaction and providing the best service experience (Mangindara, 2022).

However, one important indicator of the success of TQM implementation in hospitals is the reduction in the number of complaints from patients. Patient complaints often reflect problems in the quality of services provided, both in terms of facilities,

medical procedures, and interactions with hospital staff. Therefore, measuring and analyzing patient complaints can provide valuable insights for hospital management to evaluate and improve their service systems (Ambari et al., 2023).

Several studies have shown that implementing TQM in hospitals can contribute significantly to reducing patient complaints. For example, improvements in the patient registration process, increasing the speed and accuracy of diagnosis, more efficient management of waiting times, and improving communication between medical staff and patients can reduce the potential for complaints (Ridwan, 2022). In addition, employee training and development that focuses on communication and customer service skills can also help increase positive interactions between staff and patients, which in turn can reduce complaint rates (Amran, 2023).

This article aims to conduct a literature review regarding the implementation of TQM in hospitals and its effect on reducing patient complaints. By reviewing various studies and research that have been carried out in various hospitals, it is hoped that a comprehensive picture can be obtained regarding the effectiveness of TQM in improving the quality of health services and reducing patient complaints. It is hoped that the results of this review will provide insight and practical recommendations for hospitals seeking to implement TQM as part of their service quality improvement strategy.

This research will explore various aspects of TQM implementation, including challenges faced, successful strategies, and best practices that have been proven effective. Thus, it is hoped that this article will not only be an academic reference, but also a practical guide for hospital management practitioners who wish to adopt a TQM approach to improve the quality of their services and patient satisfaction.

RESEARCH METHODS

This research uses a literature review method to explore the implementation of Total Quality Management (TQM) in hospitals and its effect on reducing patient complaints. The main data sources used include scientific journals, conference articles, books, and research reports published in academic databases such as PubMed, Google Scholar, Scopus, and ScienceDirect. Inclusion criteria include studies that discuss the implementation of TQM in hospitals, research that evaluates the impact of TQM on service quality and patient complaints, as well as publications within the last 10 years and available in English or Indonesian. Articles that did not provide empirical data or in-depth analysis, as well as publications that were not peer-reviewed or only discussed TQM in general without a focus on the health sector, were excluded.

Once relevant literature is identified, data is collected and analyzed. The data includes information regarding the implementation of TQM in hospitals, methods for evaluating service quality and patient complaints, as well as main results related to the impact of TQM. The studies were classified based on TQM implementation method, hospital type, and geographic location. Data analysis is carried out to identify patterns, trends and key findings, including effective TQM implementation strategies and factors for TQM success or failure. The quality and validity of each study is evaluated using critical evaluation tools such as CASP or JBI Critical Appraisal Tools. The results of the analysis are prepared in a report that includes a summary of the main findings, discussion of the implications of the findings for hospital management practices, practical recommendations for implementing TQM to reduce patient complaints, as well as identification of research gaps and suggestions for further research. It is hoped that this literature review method can provide comprehensive insight into the implementation of TQM in hospitals and its impact on reducing patient complaints, thereby supporting improved quality management practices in the health sector (Andriani, 2021).

RESEARCH RESULTS

Total Quality Management (TQM) is a systematic management approach to improve service quality on an ongoing basis by involving all members of the organization. Based on the literature reviewed, the implementation of TQM in various hospitals shows a positive impact on reducing patient complaints and increasing customer satisfaction.

Research by Kurnia Deswita et al (2021) at Hospital X found that the implementation of TQM through discussion forums, observations and

interviews was effective in reducing the number of patient complaints. Patients become more aware of registration procedures and other services, which reduces errors and dissatisfaction that are often the source of complaints. Meanwhile, Rohmad Kafidzin (2016) used Importance Performance Analysis at Kumalasiwi Mijen Kudus Hospital to find that services that meet patient expectations can reduce the risk of complaints. Customer satisfaction was assessed based on the hospital's managerial performance which was evaluated through a questionnaire filled out by 15 respondents from various managerial positions.

Najmuddin et al (2023) in a cross-sectional study at RS X Makassar found that excellent and quality service contributed to patient satisfaction and loyalty. Through questionnaires, interviews and observations of 286 samples, this research shows the importance of service quality in reducing patient complaints. At Charitas Palembang Hospital, research by Manurung et al (2017) using the Six Sigma and TQM integration approach found that variables such as leadership, strategic planning, and customer focus significantly influenced hospital performance. Multivariate analysis shows that this approach can reduce the decline in customer loyalty that occurred from 2013 to 2015.

Estie Yonasari et al (2018) at Tugurejo Hospital Semarang showed that handling customer complaints effectively can reduce complaints. In his research, the Customer Service unit that handled customer complaints proactively was able to reduce the level of complaints through a "close handling" approach. Meanwhile, Andre Septian Saragih et al (2020) at Eria Hospital Pekanbaru showed that TQM which involves customer orientation, teamwork, continuous system improvement, and employee involvement significantly improves nurse performance. These results were measured using questionnaires and interviews.

Research by Suparlan and Harianto (2019) at the Semen Gresik Hospital Pavilion found a significant relationship between TQM implementation and customer satisfaction, which in turn reduced the number of complaints. This study uses a questionnaire and Spearman Rank analysis to evaluate patient satisfaction. Linta Meyla Putri et al. at the Undaan Eye Hospital in Surabaya using the customer windows method to analyze outpatient polyclinic services. The results show that speed of service, waiting time, and clarity of information are important aspects that influence the reduction in complaints.

M. Idham Masuku et al (2015) at Dr. Hospital. H. Chasan Boesoirie Ternate shows that rude

communication, long waiting times, and inadequate infrastructure are the main factors for patient dissatisfaction. This study emphasizes the importance of time management and good communication in reducing patient complaints. Nathasya GP Mewengkang et al (2023) at Dr. TNI AL Hospital. Wahyu Slamet Bitung shows that a focus on customer satisfaction, teamwork, long-term commitment, and continuous improvement significantly improves service quality. Multiple analysis shows that these factors have a positive and significant effect on reducing patient complaints.

From this literature review, it can be concluded that the implementation of TQM in hospitals consistently shows a positive influence on reducing patient complaints. A TQM approach that focuses on customer satisfaction, improving service quality, and involvement of all hospital staff is the key to success in reducing patient dissatisfaction. However, TQM implementation also faces several challenges.

TQM success requires long-term commitment from all levels of hospital management and staff. Without this commitment, quality improvement efforts are likely to be unsustainable and may result in only temporary changes. In addition, ongoing training and education for staff is essential to ensure a good understanding of TQM principles and their application in daily practice. Staff need to be trained to identify quality problems, find solutions, and implement necessary improvements effectively.

Ongoing evaluation and feedback is also necessary to identify areas that require improvement and ensure that quality improvement efforts are effective. Critical evaluation tools such as the Critical Appraisal Skills Program (CASP) or the Joanna

Briggs Institute (JBI) Critical Appraisal Tools can be used to assess the quality and validity of studies conducted (Long et al., 2020) . By using this tool, hospitals can monitor the progress of TQM implementation and make necessary adjustments to achieve desired results.

In addition, effective communication between staff and management is very important in the implementation of TQM. Staff must feel heard and supported by management, and have access to the information and resources they need to do their jobs well. Open and transparent communication can help build the trust and collaboration necessary for successful TQM (Arif et al., 2023) .

Time management is also an important factor in reducing patient complaints. Long waiting times are often the main source of patient dissatisfaction, so efforts to reduce waiting times and increase service efficiency are very necessary. This can be achieved through process improvements, use of information technology, and increased coordination between departments (Reitandi et al., 2023) .

Overall, these studies show that with appropriate and sustainable implementation of TQM, hospitals can improve the quality of their services, reduce patient complaints, and increase patient satisfaction and loyalty. This is very important in creating a positive image and competitiveness for hospitals in an era of increasingly competitive health services. Effective implementation of TQM can help hospitals achieve their strategic goals, improve patient well-being, and build a reputation as a provider of high-quality health services.

Several studies regarding TQM have been carried out by Kurnia et al (2021) and others as listed in the table below .

Author	Title	Journal name	Method (design, population, sample, variables, instruments, analyses)	Results
Kurnia Deswita , Herman Sudirman , Sri Widodo	Analysis Effort Enhancement Quality Service with Application Total Quality Management (TQM) method at Hospital	Journal Research and development Health Indonesian society	Qualitative (Forum Group Discussion, observation , etc interview)	The results achieved (Outcome) can be assessed from change behavior patient , like initially No know How procedure registration patient new after given the knowledge process patient know every mandatory procedures done so that reduce amount complaints received

Rohmad Kafidzin	Analysis of the Implementation of Total Quality Management (TQM) for Inpatient Services at Kumalasiwi Mijen Kudus Hospital	Thesis University Diponegoro	DESIGN: Importance Performance Analysis POPULATION: 30 people consisting from director , head field , head sexy, chief space , and head installation . SAMPLE: 15 people VARIABLE: performance managerial House Sick . INSTRUMENT: questionnaire ANALYSIS: critical success factor	Customer satisfaction is a form of customer evaluation of the results of the purchase interaction of a product or service compared to the expectations they have. When service meets their expectations, this will reduce the risk of complaints from patients.
Najmuddin , Achmad Indra Awaluddin , Haslinah Ahmad, Nurmiati Aminuddin	Implementation of Total Quality Management at Hospital	The Indonesian Journal of Health Promotion	DESIGN: cross sectional POPULATION: 314 people with 67 doctors , 140 paramedics , and 65 staff health other . SAMPLE: 286 VARIABLE: performance House Sick . INSTRUMENT: questionnaire , interview And observation ANALYSIS: univariate	Excellent service and quality will impact on satisfaction patient And impact on increase customer loyalty to That service offered by That serve industry . One size from achieved quality something service is loyalty consumer .
Manurung , Jessihana Morgan; Puput Oktamianti , supervisor; Adang Bachtiar , examiner; Retired Junadi , examiner; Suprijanto Rijadi , examiner; Syahrul Muhammad	Study implementation quality with approach integration of six sigma and TQM through evaluation Malcolm baldrige at home Sick Charitas Palembang = Integration of six sigma and TQM through Malcolm baldrige assessment in Charitas Palembang Hospital	Journal Administration House Indonesian Pain	DESIGN: Sequential Explanatory POPULATION: all employee House Sick . SAMPLE : 30% of all over population VARIABLE: quality service health based on Baldrige criteria . INSTRUMENT: questionnaire , interview And observation ANALYSIS: multivariate	Decline loyalty customer from 2013 to in 2015 it was 80. From the results research , found all over variable Leadership, Planning Strategy , Focus Customer , Focus Source Power human , Focus Process, Measurement- analysis And management knowledge own connection which is significant in influence performance House Sick . Got it from seven criteria Malcolm Baldrige , there are 3 variables that have mark above the total average , and 4 criteria have mark below the total average .
Estie Yonasari , Septo Pawelas Arso , Wulan Kusumastuti	Description Handling Complaint Customers at the Home Customer Service Unit Sick Tugurejo	Journal Health Public	DESIGN: Qualitative Descriptive POPULATION: Coordinator and Customer Service Staff. Informant triangulation is Head of TU Sub- Division , Law And Public	In handling complaint customers at the Tugurejo Regional Hospital Customer Service Unit , handled "close handling" complaints ie if customers who complain accept explanation or answer from top

	Semarang Regional General		Relations as well as Tugurejo Regional Hospital patient . SAMPLE: Customer Service Unit officers totaling 7 (seven) people VARIABLE: Source Power people , budget , SOP INSTRUMENT: questionnaire , interview And observation ANALYSIS: purposive sampling	Customer Service officer the complaint he submitted as well as willing sign form solution complaint . Whereas For repair from incoming complaints No become indicator resolved complaint . This matter possible For decline complain on patient .
André Septian Saragih , Restu , Anggia Paramitha	The Effect Of Total Quality Management Practice On The Performance Of Nurses At The Eria In Hospital Pekanbaru	JOM FEB	DESIGN: Qualitative Descriptive POPULATION: all nurse at home Sick Eria Pekanbaru , numbering 73 person. SAMPLE: sample census VARIABLE: orientation on customers , work The same team (team work), repair system continuous , involvement and empowerment employee to performance nurse . INSTRUMENT: kuisioner dan waawancara ANALYSIS: skala ordinal	The results of this study indicate that Total Quality Management which consists of variables focused on customers, improvement of the cooperation system, and employee involvementand empowerment has a positive and significant effect on performance. is 72.1% while the remaining 27.9% is influenced by other variables that are not included in this regression model. Nurses at Eria Hospital Pekanbaru, either simultaneously or partially
Suparlan, Harianto	Total Quality Management with Customer Satisfaction	Journals of Community Nurses	DESIGN: cross sectional POPULATION: The population is patients and nurses who work at the Semen Gresik Hospital Pavilion. SAMPLE: The total sample of TQM and customer satisfaction was 29 respondents VARIABLE: customer satisfaction INSTRUMENT: questionnaire ANALYSIS: Spearman Rank statistics	The research results show that there is a significant relationship between the implementation of Total Quality Management (TQM), which is a central factor, with customer satisfaction ($p = 0.013$), from information and analysis ($p = 0.026$), from planning factors ($p = 0.023$), from resources humans ($p =$ 0.000). Customer satisfaction with health services reduces the number of patient complaints against hospitals.

Linta Meyla Daughter , Stephen Supriyanto	Analysis Of Service Gaps In Outpatient Polyclinic Using Customer Window	Journal Administration Indonesian Health	DESIGN: observational customer analytics windows POPULATION: general patients of the outpatient clinic of Undaan Eye Hospital. SAMPLE: Total 98 VARIABLE: responsiveness, reliability, empathy INSTRUMENT: questionnaire ANALYSIS: customer windows	Results customer window analysis in polyclinics take care The road at Undaan Eye Hospital , Surabaya shows that aspect speed service , time Wait And clarity information is at on quadrant . Aspect This produce decline Complaint from Undaan Eye Hospital on in 2015.
M. Idham Come on in , Lutfan Blue , Mubasysyir Hasanbasri	Health Service Factors Affecting The Satisfaction Of Patients In The Dr. H. Chasan Boesoirie Regional Public Hospital Ternate	Journal Management Service Health	DESIGN: research qualitative explorative (case study) POPULATION: BPJS card holders, PBI and non-PBI, patients with chronic diseases and patients with acute diseases, and gender differences SAMPLE: 12 people from the population VARIABLE: patient complaints INSTRUMENT: questionnaire ANALYSIS: triangulation	Being dissatisfaction patient like silent just , angry And rage , commit protest , complain And compare with House Sick others , as well choose treatment to House Another pain . Factors reason dissatisfaction to staff that is rude communication , making things difficult patient , and No discipline time . To management namely , time Wait And information no schedule Certain . To environment that is , means And infrastructure , as well equipment medical yet adequate .
Nathasya GP Mewengkang , Indrie D. Palandeng , Shinta JC Wangke	The Effect Of Total Quality Management On The Quality Of Services At Tni Al Dr. Revelation Slamet Bitung Hospital During The Covid-19 Pandemic	Journal Research Economics , Management , Business and Accounting ,	DESIGN: quantitative descriptive POPULATION: 68 patients SAMPLE: 40 patients VARIABLE: customer focus, teamwork, long- term commitment, continuity improvement. INSTRUMENT: questionnaire ANALYSIS: multiple analysis	Focus on satisfaction customer And subtraction complaints , teamwork , long-term commitment, simultaneous continuous improvement has a significant effect on the quality of service at the TNI AL Dr. Hospital. revelation slamet bitung, apart from that partial focus on customers, teamwork, long-term commitment, continuous improvement are influential positive and significant impact on the quality of service at the TNI AL Dr. Hospital. revelation slamet bitung.

CONCLUSION

Implementation of Total Quality Management (TQM) in hospitals has proven effective in reducing the number of patient complaints and increasing customer satisfaction. From the various studies that have been analyzed, it appears that TQM which involves all members of the organization, focuses on customer satisfaction, and continuously improves service quality can create a better service environment that is responsive to patient needs. Overall, these studies show that appropriate and sustainable implementation of TQM can improve the quality of hospital services, reduce patient complaints, and increase patient satisfaction and loyalty. Therefore, hospitals that are committed to implementing TQM systematically and sustainably will be better able to meet patient expectations and create a positive image as a provider of high-quality health services.

SUGGESTIONS

Implementation of Total Quality Management (TQM) in hospitals can be improved with strong management commitment, regular training for staff, regular evaluations, and effective communication. A focus on improving processes and time management, as well as a culture of innovation and involvement of all members of the organization, is also important for reducing patient complaints and improving the overall quality of service.

REFERENCES

- Adriansyah, AA, Setianto, B., Afridah, W., Asih, AYP, Supriyanto, S., Prastika, VID, & Istifaiyah, A. (2020). Analysis Of Nurse's Job Satisfaction Based On Internal Service Quality Measurement. *Journal of Health Research*, 9(2), 94-101.
- Ambari, A., Sunarsih, E., & Minarti, M. (2023). Literature Study Regarding Improving Quality Management of Health Services in Indonesian Hospitals. *Journal Of Nursing And Public Health*, 11(2), 318-330.
- Amran, R. (2023). Total Quality Management and Job Satisfaction on Nurse Performance. *Scientific Journal*, 2(3), 110-116.
- Andriani, W. (2021). Use of Systematic Literature Review Methods in Sociological Research. *Journal of Higher Education and Education*, 7(2).
- Arief, I., & Setianingrum, A. (2023). Implementation of Total Quality Management (Tqm) Leader for Dental and Oral Hospital Patient Satisfaction in Jakarta. *Jemsi (Journal of Economics, Management and Accounting)*, 9(1), 125-131.
- Deswita, K., Sudirman, H., & Widodo, S. (2021). Analysis of Efforts to Improve Service Quality Using the Total Quality Management (Tqm) Method at Rs X. *Indonesian Public Health Research and Development Journal*, 2(1), 37-48.
- Hendrani, DH, & Gorda, AES (2021). Implementation of the TQM Rati Model in Hospital Health Services in the Era of Industrial Revolution 4.0. *Bali Health Journal*, 5(1), 1-13.
- Health Quality Assurance. Prosperous Young Feniks.
- Kafidzin, R., Yuniawan, A., & Rahardjo, ST (2016). Analysis of the Implementation of Total Quality Management (Tqm) of Inpatient Services at Kumalasiwi Mijen Kudus Hospital (Doctoral Dissertation, Diponegoro University).
- Long, H. A., French, D. P., & Brooks, J. M. (2020). Optimizing The Value Of The Critical Appraisal Skills Program (Casp) Tool For Quality Appraisal In Qualitative Evidence Synthesis. *Research Methods In Medicine & Health Sciences*, 1(1), 31-42.
- Mangindara, Skm., M. Kes, Suci Rahmadani, Skm., M. Kes, & Sri Devi, S. Kes. (2022). *Management*
- Manurung, JM, Oktamiati, P., Bachtiar, A., Junadi, P., Rijadi, S., & Muhammad, S. (2017). Study of Quality Implementation Using the Six Sigma and TQM Integration Approach Through the Malcolm Baldrige Assessment at Charitas Hospital. *Indonesian Journal of Hospital Administration*, 3(2), 127-138.
- Masuku, MI, Lazuardi, L., & Hasanbasri, M. (2015). Health Service Factors That Influence Outpatient Satisfaction at Dr. Regional General Hospital. H. Chasan Boesoirie Ternate. *Journal of Health Service Management (The Indonesian Journal of Health Service Management)*, 19(1).
- Mewengkang, N., Palandeng, ID, & Wangke, SJ (2023). The Influence of Total Quality Management on the Quality of Service at TNI Al Dr Hospital. *Wahyu Slamet Bitung During the Covid-19 Pandemic. Emba Journal: Journal of Economic, Management, Business and Accounting Research*, 11(1), 635-644.
- Najamuddin, N., Indra Awaluddin, A., Ahmad, H., & St Aminuddin, N. (2023). Implementation Of Total Quality Management At Hospital X Makassar.

- Nguyen, T.L.H., & Nagase, K. (2019). The Influence Of Total Quality Management On Customer Satisfaction. *International Journal Of Healthcare Management*, 12(4), 277-285.
- Purwanti, MRCV (2024). The Influence of Total Quality Management (Tqm) on the Performance of Hermina Samarinda Hospital. *Jma: Journal of Management and Accounting*, 13(1), 061-071.
- Putri, LM, & Supriyanto, S. Analysis of Service Gaps in Outpatient Polyclinic Using Customer Window. *Indonesian Journal of Health Administration*, 4(2), 117-125.
- Reitandi, R., Aslami, N., & Nurbaiti, N. (2024). Implementation of Total Quality Management (Tqm) in Improving the Quality of Administrative Services at the Deli Serdang District Health Service. *Scientific Journal Of Reflection: Economics, Accounting, Management And Business*, 7(1), 271-282.
- Ridwan, MAR (2022). Performance Measurement Using Mbnqa Criteria (Malcolm Baldrige National Quality Award) At Faisal Islamic Hospital Makassar = Performance Measurement Using Mbnqa Criteria (Malcolm Baldrige National Quality Award) At Faisal Hospital Makassar (Doctoral Dissertation, Hasanuddin University).
- Sugiat, AP, & Atmawinata, MR (2023). Strategy for Improving Service Quality and Patient Safety at Bandung City Regional General Hospital. *Proceedings of Frima (Management and Accounting Scientific Research Festival)*, (6), 406-414.
- Supartiningsih, S. (2017). Service Quality: Hospital Patient Satisfaction: The Case of Outpatients. *Jmmr (Journal of Medicoeticolegal and Hospital Management)*, 6(1), 9-15.
- Tejanagara, FCH, Kosasih, FG, & Safariningsih, RTH (2022). Implementation of Total Quality Management (Tqm) in Improving the Quality of Hospital Services. *Siam International Journal*, 1(01).
- Yanuarti, R., Febriawati, H., Angraini, W., Pratiwi, BA, & Wati, N. (2021). Patient Perceptions About the Quality of Hospital Services During the Covid-19 Pandemic. *Asclepius Public Health Journal*, 3(2), 49-59.
- Yonasari, E., & Arso, SP (2018). Overview of Handling Customer Complaints in the Customer Service Unit of the Tugurejo Regional General Hospital, Semarang. *Journal of Public Health*, 6(5), 65-74.

INFORMATION ABOUT PREVENTING ABNORMAL WHITE (FLOUR ALBUS) IN ADOLESCENT FEMALES: LITERATURE REVIEW

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ABSTRAK : INFORMASI TENTANG PENCEGAHAN KEPUTIHAN ABNORMAL (FLOUR ALBUS) PADA REMAJA PUTRI: TINJAUAN LITERATUR

Latar Belakang: Keputihan, yang disebabkan oleh fluor albus dan infeksi seperti kanker dan kandida albicans, mempengaruhi 90% anak-anak di Indonesia karena iklim tropis dan kurangnya pendidikan, sehingga menyoroti perlunya kesehatan reproduksi yang lebih baik.

Tujuan: untuk mengidentifikasi pengetahuan pencegahan keputihan abnormal (Flour Albus) pada remaja putri.

Metodologi: Penelitian ini menggunakan tinjauan pustaka. Pencarian artikel menggunakan Google Scholar dan Pubmed berdasarkan tahun 2020-2024, Berdasarkan hasil seleksi literatur, terdapat 20 penelitian tentang Informasi, Tepung Albus, Remaja Wanita dengan menggunakan metode studi kasus eksperimental, cross sectional, analitik

Hasil: Tinjauan literatur berfokus pada pentingnya pendidikan kesehatan dalam mencegah keputihan pada remaja. Ini mencakup 20 jurnal pendukung, 11 di antaranya eksperimental dan 9 non-eksperimental. Ulasan tersebut menyoroti peran media pembelajaran audiovisual dalam menyampaikan pengetahuan tentang keputihan dan pencegahannya.

Kesimpulan: Pengetahuan remaja tentang keputihan masih terbatas sehingga berdampak pada sikap dan tindakan pencegahannya. Informasi yang salah dan kurangnya perhatian dari orang-orang terdekat, khususnya para ibu, berkontribusi terhadap perilaku buruk, sehingga menyoroti perlunya peningkatan pendidikan dan kesadaran.

Saran :Bagi peneliti selanjutnya disarankan melakukan tinjauan komprehensif terhadap keputihan pada remaja, meningkatkan kesadaran remaja putri tentang menjaga kebersihan, dan mengingatkan layanan kesehatan untuk memberikan informasi yang akurat.

Kata Kunci :Edukasi, Flour albus, Keputihan Abnormal

ABSTRACT

Background: Vaginal discharge, caused by fluor albus and infections such as cancer and candida albicans, affects 90% of children in Indonesia due to the tropical climate and lack of education, thus highlighting the need for better reproductive health.

Purpose: to identify the knowledge of prevention of abnormal vaginal discharge (Flour Albus) in adolescent females.

Method : This study used a literature review. Article search using Google Scholar and Pubmed based on 2020-2024, Based on the results of literature selection, there are 20 studies on Information, Flour Albus, Adolescent Women using experimental, cross sectional, analytical case study methods.

Results: The literature review focused on the importance of health education in preventing vaginal discharge in adolescents. It included 20 supporting journals, 11 of which were experimental and 9 non-experimental. The review highlighted the role of audiovisual learning media in conveying knowledge about vaginal discharge and its prevention.

Conclusion: Adolescents' knowledge about vaginal discharge is limited, which impacts their attitudes and preventive measures. Misinformation and lack of attention from loved ones, especially mothers, contribute to poor behavior, highlighting the need for increased education and awareness.

Suggestion: Future researchers are advised to conduct a comprehensive review of vaginal discharge in adolescents, raise awareness of adolescent girls about maintaining hygiene, and remind health services to provide accurate information

Keywords: Abnormal Vaginal Discharge, Education, Flour albus

INTRODUCTION

Fluor albus, a clinical symptom of various infections, cancers, or benign tumors of the reproductive organs, is a discharge from the genitals other than blood (Monintja and Anandani 2020). A more precise description of leucorrhea is a fungal infection of the female genitals, or candida albicans, which is caused by a yeast-like organism. Many young people do not give much thought to the condition of their internal intimate organs, and prefer to focus on their external appearance only (Hidayah, Sari, and Peu 2021).

Wanito, dkk. (2022) claimed that young women who place a high value on appearance could also be the cause of this negative behavior. similar to the average research respondent who indicated that they often wear tight pants or jeans. Wearing jeans is not recommended because the pores are so narrow that they restrict airflow near the intimate organs. Teenagers' ignorance of the importance of keeping their genitals clean is one of the reasons why this happens so often. If this problem is not addressed now, it will cause problems in the future (Wanito Ambarsari 2022) Although not all adolescents get adequate and accurate information about reproductive health, adolescents who have a basic awareness of the topic will be more capable of healthy and responsible behavior. Adolescents can engage in dangerous activities due to lack of information and understanding (Nurchandra, Mirawati, and Aulia 2020).

According to the Indonesian Ministry of Health (2017) in Darmala (2018), due to Indonesia's tropical environment, about 90% of women may experience vaginal discharge. The fungus spreads quickly so it often causes vaginal discharge. Unmarried women or adolescent girls aged 15-24 years reported symptoms of vaginal discharge, accounting for about 31.8%.

This shows that more and more teenagers are at risk of developing vaginal discharge (Astutie n.d.) In fact, flour Albus should be recognized as soon as possible because it is a sign of almost all gynecological disorders. Mulyanti (2022) distinguishes two types of vaginal discharge, namely normal physiological vaginal discharge, and pathological vaginal discharge that is deviant or diseased. Normal vaginal fluid appears clear, watery, white, or watery when dried on clothing (Mulyanti et al. 2022)

Throughout a woman's lifetime, 75% worldwide will experience vaginal discharge at least once, and up to 45% will experience it two or more times. Candida albicans is the most common cause of vaginal discharge. About 90% of women in

Indonesia are at risk of leucorrhea due to the country's tropical climate which facilitates the growth of fungi and increases the chances of leucorrhea. Vaginal discharge symptoms are also reported in single women and young women (15-24 years old), which is about 31.8% of cases. This indicates that vaginal discharge is more common in adolescents (Asri, Harlita, and Azahra 2023). Poor vaginal discharge prevention behavior, namely poor hygiene after urination and defecation, is the cause of vaginal discharge in adolescents. Lack of hand washing can cause irritation or germ contamination of the vulva (Umami et al. 2022). Irritation can also occur from underwear that does not absorb sweat and tight clothing. Adolescent reproductive problems must be taken seriously, says Marpaung, because many of these problems originate in Indonesia, where one of the main causes is lack of knowledge and treatment of vaginal discharge (Chitra Dewi, Marisna Eka Yulianita, and Annisa Khaerani 2022).

Early education about vaginal discharge and its causes is important for adolescent girls. As a woman's physiology changes as she grows from childhood to adulthood, particularly in the area of her reproductive organs, adolescents may experience problems if they are not aware of them, and young women may not have experienced such changes before (St. Nurul Izzah Habibarrahan, Muhammad Khidri Alwi, and Nurul Ulfah Mutthalib 2021). The high percentage of adolescent girls in this study who occasionally engage in activities that risk vaginal discharge indicates that many of them still lack a thorough understanding of these activities (Miftachul, Syafirasari, and Hayyun 2023). Therefore, it is important to educate young women about vaginal discharge and how to prevent it through behavior. As stated by Yulianty and Oriza (2018). The incidence of vaginal discharge is strongly influenced by knowledge, attitude, use of pantyline, and use of vaginal cleansers. The two factors that have the greatest influence on the incidence of vaginal discharge are attitude and the use of pantliners (Oriza and Yulianty 2024).

Naturally, the impact of vaginal discharge is not only disturbing, but also more likely to cause new risks. These risks include the development of health problems in the reproductive system, especially in women, which makes it easier for diseases that cause excessive vaginal discharge or "flour albus" to attack the intimate organs. It is usually yellow in color. Gonorrhea, uterine myoma, cervical cancer, and uterine cancer are among the serious diseases that cause disorders of the female reproductive organs and are characterized by profuse vaginal discharge. The harmony of intimate relationships and home life

is negatively affected by vaginal discharge, especially if it affects pregnant women. If preventive measures are not taken, this can lead to fetal problems, such as early birth (Oriza and Yulianty 2024)

Abnormal vaginal discharge (abnormal) is usually caused by bacteria, fungi, viruses, and stress. It can also result in vaginal discharge accompanied by itching and unpleasant odor in the genital area. Adolescent reproductive health must be maintained in order to improve quality of life and ensure long-term health. Therefore, to prevent abnormal vaginal discharge, adolescent girls should take care of their genitals by keeping the vulva clean. Many people still do not know how to properly clean their genitals after urinating and defecating. Some common mistakes include cleaning in the wrong direction, using too much soap, and not wearing underwear when cleaning. Pads used during menstruation are rarely changed because they are comfortable to use and do not absorb sweat. According to Winna (2020), this disease can cause vaginal discharge which can be caused by infectious factors or the presence of foreign objects in the reproductive organs (Winna Kurnia Sari. AZ 2020)

Many women in Indonesia do not know about vaginal discharge so they consider vaginal discharge as a common thing and not to worry about, in addition to embarrassment when women / adolescents experience vaginal discharge which makes women / adolescents not consult a doctor (Riza Tsalatsatul Mufida et al. 2023). Vaginal discharge cannot be considered a common thing, because the consequences of untimely treatment of vaginal

discharge can not only lead to infertility or pregnancy outside the womb, vaginal discharge can also be the beginning of cervical cancer (cervical cancer) which can lead to death if not consulted to health workers early on (Ilmiawati and Kuntoro 2017)

We conducted a literature review as one of the initiatives to stop and educate the public about the incidence of vaginal discharge (Flour Albus) in adolescents. The purpose of this literature review is regarding the prevention of abnormal vaginal discharge in adolescent girls.

RESEARCH METHODS

This research method is a literature review that aims to obtain a theoretical basis that can support the solution of the problem under study and reveal various theories that are relevant to the case found. Based on the results of the literature search in the database, researchers found 1985 articles using Google Scholar and Pubmed. The keywords selected in the search "Information, Flour Albus, Adolescent Female" Furthermore, the search results obtained were filtered based on the 2020-2024 title and full text availability so that 830 were obtained. Then, 20 articles were excluded because they did not meet the inclusion criteria, and 25 articles were obtained.

RESEARCH RESULTS

Based on the results of literature selection, there were 20 studies on Information, Flour Albus, Adolescent Female using experimental, cross sectional, analytic, case study methods (Table 1)

Table 1
Flour Albus Information In Adolescents

Title/author/year/location	Research Method	Intervention	Result
Effect of Health Education Using Audiovisual Media on Level of Knowledge about Leucorrhea (Flour Albus) (Eka Noviyanti, Sunanto, and Iis Hanifah 2023) Eka Noviyanti, Sunanto, Iis Hanifah Probolinggo, Indonesia	pre-experimental method with one group pretest and post-test design	40 young women were in the form of answers to a questionnaire	The analysis results with the Wilcoxon test obtained a significant value of 0.05 and p-values of 0.001. It can be concluded that health education with the audiovisual method influences the knowledge of vaginal discharge (flour albus) in young women in Randutatah Village, Probolinggo Regency
Effectiveness Test of Sunkist Orange Peel Ethanol Extract (Citrus Sinensis L. Osbeck) on the	laboratory experimental design (true experiment)	The inhibition test was carried out using the agar	Sunkist orange peel extract has significant antifungal effectiveness against

Growth of Candida Albicans Mushrooms as a Cause of Fluor Albus a Woman Yolanda Eliza Putri Lubis, Widya Pasca Amir Medan, Indonesia	with a post-test control group design only approach	diffusion method according to McFarland standards	Candida albicans fungus and the higher the concentration of the extract given, the larger the diameter of the inhibition zone formed
The effect of health education on the prevention of flour albus in lhoking Prison, The District of Aceh Besar Miftahul Jannah, Fitriani, Anita Aceh Besar, Indonesia	This study was quasi-experimental with a one-group pretest-posttest design.	Data were collected by questionnaires and was conducted on March 22, 2019. A total sampling technique was used in this study. Sampling was done using. Data analysis using Wilcoxon test.	The results showed that out of 27 respondents, 3.33% had negative attitudes before being given health education and 59.3% had positive attitudes after being given health education, and after statistical testing with the wilcoxon test, the p-value was 0.020 ($p \leq 0.05$)
The Effect of Health Education on Knowledge, Attitudes, and Actions in Prevention of Leukorrhea in Adolescent Girls Iswatun Iswatun, Kusnanto Kusnanto, Abd Nasir, Lailatul Fadliyah, Endah Sri Wijayanti, Joko Susanto, Amellia Mardhika, Arifal Aris, Ni wayan Suniyadewi.	This study used a pre-experimental research design with a one group pre-post test design approach with a purposive sampling of 150 students	The research data were obtained by means of a questionnaire and tested using the Wilcoxon Signed Rank Test with a significance level of $p < 0.05$	The results of statistical tests showed that there were significant differences in knowledge ($p = 0.000$), attitude ($p = 0.000$) and action ($p = 0.000$) after being given health education. Providing health education is an alternative in increasing the knowledge, attitudes and actions of adolescents. It is expected that, after this, the respondent can understand the concept of leukorrhea and can prevent the occurrence of leukorrhea pathology
The Influence of Peer Group Education on Menstrual Hygiene on Knowledge of Pruritusvulvae Prevention in Adolescent Girls at SMP Muhammadiyah 4 Medan Henri Triana, Lilis Pujiati, Suhermi Medan, Indonesia	The practical approach used for participant training can directly apply knowledge gained during the presentation and questioning process.	activities evaluated use pre-test and post-test questionnaires, as well as practice education, health, and counseling.	Result of activity: This is an enhancement knowledge participant about health reproduction among teenagers of 8.28 and peer education of 5.17 after the follow-up activity. Participants are also capable of recognizing health problems, common reproduction that appears in adolescence, and manner prevention.
The Influence of Sources of Information and the Role of Parents on Vaginal Discharge Prevention Behavior in Adolescent Girls	This research aims to determine the direct and indirect influence as well as the magnitude of	The instrument used is a closed questionnaire. This research uses saturated sampling.	The results of the study showed that the behavioral variable for preventing vaginal discharge in young women at SMA 38 Jakarta

Ageng Septa Rini Jakarta, Indonesia	information sources and the role of parents on vaginal discharge prevention behavior among young women at SMA 38 Jakarta in 2023. Crosssectional research design using a quantitative approach	Sample of 90 Young Women. The data analysis used is Structural Equational Model (SEM) using Smart PLS 2.0	was directly influenced by the source of information (29.24%) and the role of parents (31.4%), while other factors not studied influenced the behavioral variable by 2.74%. It is recommended that young women get clear sources information and the role of parents and schools should provide information about vaginal discharge prevention behavior
Reduce the Incidence of Flour Albus Using the Betel Leaves Extract Risman Tunny, Aulia Deby Pelu, Jarmil Souliissa Maluku, Indonesia	It is a quantitative research by using quasyexperiment design to determine the existence of vaginal discharge (pre-test) and examine the effectiveness of the betel leaves extract after treatment (post-test)	The sample were 18 respondents with observation sheet given	Research result shows that 13 of 18 respondents who experienced vaginal discharge cured after being treated in the form of betel leaves extract. Itcan be concluded that vaginal discharge before and after the treatment is given for the provision of betel leaves extract is different or experience the healing significantly
Knowledge of preventing abnormal vaginal discharge (flour albus) in adolescent girls Nurul Husna, Agustine Ramie, Marwansyah Banjarmasin, Indonesia	This study used a descriptive method with a population of 376 female students of SMAN 1 Martapura with a sample size of 194 respondents, selected by proportional stratified random sampling.	data were collected using questionnaires and presented using frequency distribution tables.	The results showed that the majority of respondents had sufficient knowledge about the prevention of abnormal vaginal discharge (Flour Albus), namely 51%, knowledge of the use of underwear in the sufficient category as much as 74.7%, knowledge of caring for genitalia in the majority of sufficient categories as much as 86.1%, knowledge of the use of genital cleansing fluids in the majority of sufficient by 78.4% and knowledge of the use of pantyliner in the majority of sufficient by 68%
The Relationship Of The Use Of Female Cleansing Liquid And Pantyliners To The Causes Of Whitening The Pathophys Of Adolescent Women In Hamlet Ii, Bakaran Batu Village, Batang Kuis District, Deli Serdang Regency	In this study, the researcher used an analytical descriptive design using a cross sectional approach	population of 68 and a sample of all respondents and sampling using total sampling with the research instrument, namely the	indicating that there is a significant relationship between the use of feminine hygiene fluids and pantyliners on the causes of pathological vaginal discharge. Young women are

Erin Padilla Siregar and Sri Rezeki Deli serdang, Indonesia		questionnaire	expected not to use feminine hygiene fluids and pantyliners because they can interfere with vaginal pH, making the vagina moist, which will lead to vaginal discharge
The Effectiveness Of Between Leaves Boiled Water For Overcoming Leucorrhoea In Grade X Adolescents At Hafsyah Medan Health Vocational School In 2021 Maulina Mawaddah , Eka Sylviana Siregar Medan, Indonesia	This type of research was a pre-experimental design study with the one group pretest-post test method	The population in this study is 20 students who have vaginal discharge problems.	The results of the study Before being given boiled water of betel leaf there were the majority of teenagers who experienced vaginal discharge with an abnormal scale of 20 Orang respondents (100%). After being given boiled water of betel leaf, there were the majority of teenagers with a normal scale of 20 respondents (100%). The T test was carried out in the control group before being given boiled water for betel leaves and after being given boiled water for betel leaves, there was a value of -2.517 with a p-value of 0.021
Evaluation: Media Booklet About Education on Prevention of Flour Albus for Teenage Girl Cahaya Hidayati, Ei Wah Phyu Thet, Phonethipsavanh Nouanthong Jambi Indonesia	The research method used is RnD with a 4D design. Defining needs was carried out through questionnaires to determine the needs of student. Design was created based on the results of the definition	The development of a media booklet about Flour Albus prevention education for young women in high schools was validated by experts with results that were suitable for use and had a significant positive impact in increasing students' knowledge about reproductive health problems.	The main findings show that the use of the booklet has succeeded in increasing awareness of adolescent girls about the signs and symptoms of Flour Albus, as well as the preventive steps they can take.
The Effect of Reproductive Health Education with Video Learning Multimedia and Education on the Increasing of Knowledge and Attitude About Prevention of Fluor Albus Pathology of Female Adolescent	The research method uses a quasi-experimental design with pre-test post-test control group design. The study sample was 44 young women. Paired t-test and	Intervention through health learning models using multimedia can change the knowledge, attitudes, and behavior of preventing albus	The analysis showed that there were significant differences in the increase in the average value of knowledge ($p = 0,000$), attitudes ($p = 0,001$), and behavior ($p = 0,000$) after receiving multimedia and educational video learning

Nurhumairah, Ummu Salmah, Muhammad Tamar Makassar, Indonesia	Anova test were applied to analyze data	fluorine in young women.	
The Relationship of Knowledge about Personal Hygiene with Preventive Behavior of Flour Albus in Young Women in Taeng Village, Pallangga District Aulia Mutmainnah, Agustina Ningsi, Wirawati Amin, Indriani Makassar, Indonesia	Analytic Survey research type with Cross Sectional Study approach.	taken from primary data, unmarried adolescent girls aged 12-25 years in Taeng Village, RW 004 Kec. Pallangga, Gowa kab as many as 98 people.	The results of statistical tests with Chi-square obtained a value of = 0.001. The conclusion in this study is that there is a relationship between knowledge about personal hygiene and the behavior of preventing flour albus in adolescent girls in Taeng Village, Pallangga District. Therefore, it is recommended for young women to increase their knowledge by reading books or looking for information on the internet about personal hygiene in the prevention of vaginal discharge and can also ask directly to teachers or parents so that appropriate and correct information about genital personal hygiene is obtained
Effectiveness of Red Betel and Green Betel Decoction in the Management of Flour Albus in Adolescent Girls at PMB Herlina in 2023 Angga Aprianti, Magdalena Tri Putri, Uci Ciptiasrini Jakarta, Indonesia	The research design used is using the Study Case Literature Review method with a case study approach.	In this study, there were 2 samples where 1 sample used the intervention of giving red betel juice and 1 sample with green betel juice.	The study used univariate analysis to describe midwifery care and to determine the effectiveness of red betel and green betel decoction in managing flour albus in adolescent girls at PMB Herlina in 2023.
The effect of vulva hygiene education video media on the knowledge level and attitude of adolescent women with flour albus Riski Novita Ratna, Ana Mariza, Ike Ate Yuviska, Ratna Dewi Putri Lampung, Indonesia	Method This type of research is quantitative, the research design is a pre-experimental method with a One group pretest - posttest design approach.	Vulvar hygiene educational video media on the level of knowledge and attitude of adolescent girls towards fluor albus treatment	Results The average knowledge before being given vulva hygiene educational video media with an average of 59.710 after being given vulva hygiene educational video media with an average of 76.004. The average attitude before being given vulva hygiene educational video media the average is 42. After being given vulva hygiene educational video

			media the average is 72.54. The results of bivariate data analysis using the t test obtained a p value of 0.000 <0.05.
<p>The Effect of Reproductive Health Education with Multimedia Video Learning on the Improvement of Fluor Albus Prevention Behavior Young Woman Pathologist</p> <p>A.Ummu Saadah Mukhtar, Budu, Yusring, Nasruddin, Azniah</p> <p>Makassar, Indonesia</p>	<p>This type of research is Quasy-experimental with Pre-test Post-Test Control Group Design</p>	<p>Based on the determination of the number of samples, the sample in this study amounted to 18 respondents, in anticipation of dropping out of 77 respondents from the study, the researchers set 20% so that the number of respondents was 22 respondents in each group (Using 1:1:1) so the sample in this study amounted to 66 people with Purposive Sampling technique.</p>	<p>The results of the study indicate that there is an effect of reproductive health education with multimedia video learning on the improvement of behavior/prevention of pathological fluor albus (leucorrhoea) in adolescent girls</p>
<p>Effectiveness decoction of red betel leaves (piper crocantum) against decreased symtoms of flour albus ini high school girls</p> <p>Rosa Purwanti, Niken Grah Prihartanti, Rini Hayu Lestari</p> <p>Jombang, Indonesia</p>	<p>his study uses quasi-experimental research design with one group undertaking pre- and post-tests.</p>	<p>It involved 20 adolescent girls of Al-Adzkia Sentul Boarding School in which the sample was taken using purposive sampling techniques. Further, a closed ended questionnaire is used to collect data, then analyzed using paired T-test</p>	<p>The results showed a meaningful difference before being given treatment for 13.40. After treatment the value became 8.27 with a p-value < of α (0.005)</p>
<p>Education on Adolescent Personal Hygiene Behavior: Efforts to Prevent Fluor Albus in Sabilil Muttaqien Islamic Boarding School</p> <p>Cintika Yorinda Sebtaleasy, Lucia Ani Kristanti</p> <p>Madiun, Indonesia</p>	<p>The method used in this educational activity uses health education techniques through lectures and questions and answers through face-to-face or offline.</p>	<p>held health education about personal hygiene to prevent the occurrence of fluor albus with lecture and question and answer methods.</p>	<p>The result of this activity is that students know about personal hygiene, so their behavior will change.</p>
<p>The Correlation of Knowledge with Leucorrhea in Female Students of MTsN Batang</p> <p>Toru Fitri Khairani, Asfriyati, Fazidah Aguslina Siregar</p>	<p>This is a cross sectional study that was conducted data collection and the measurement</p>	<p>this research were all of female students class of 7 th and 8 th of MTsN Batang Toru South Tapanuli District as</p>	<p>The results of research by bivariate analysis shows that there was a relationship between knowledge and leucorrhea ($p < 0,001$). From the</p>

Sumatera Utara, Indonesia	variable of female students' knowledge of leucorrhea and the variable of leucorrhea incidence was only once at the same time	many as 259 respondents	results obtained, it is advisable to female student of MTsN Batang Toru to find more information and read books about leucorrhea and its impact on reproductive health, especially for adolescents so that it can motivate themselves to know more about prevention
Differences In The Effectiveness Of Green Belt Leaf Boiled Water And Soursop Leaves On Which White In Adolescent Girls At SMAN 4 Serang City, Banten, 2023 Uli Anitasari Matanari, Tetin Rismayanti Jakarta, Indonesia	The research used was a Quasy Experiment type of research to determine the difference in the effectiveness of giving boiled water from green betel leaves and soursop leaves on vaginal discharge in young women at SMA Negeri 4 Serang Banten with a Two Group Pretest - Posttest research design	Respondents were divided into 2 groups, namely the betel leaf group and the soursop leaf group, each group numbering 45 people.	the results of the Wilcoxon test, which obtained a significance value of 0.001 ($p < 0.05$), it can be concluded "there is a significant difference in the effect of boiled green betel leaf water on vaginal discharge" and the results of the Wilcoxon test obtained a significance value of 0.000 ($p < 0.05$)

DISCUSSIONS

Based on the results of journal analysis, researchers found 20 supporting journals to strengthen this literature review, of the 20 journals found, they were analyzed according to their characteristics and components, it was found that 11 journals were experimental research and 9 journals were non-experimental research.

As an example of pre-experiment research in accordance with the characteristics of the literature review by Eka Noviyanti, Sunanto, Iis Hanifah said that health education is an important issue that needs attention for all parties. Problems often faced by women related to reproductive health are vaginal discharge, audiovisual learning media can be interpreted as a means or media that combines sound and moving images to help convey learning material delivered by the teacher so that students can receive it well and be accepted and understood more easily so that it can be concluded that Health Education with audiovisual methods affects knowledge about vaginal discharge (flour albus) in adolescents. Health workers are expected to evaluate and conduct early education to adolescent girls about vaginal discharge (flour albus) to prevent

abnormal vaginal discharge (pathological flour albus) so as to improve the quality of health, especially in reproductive health (Eka Noviyanti et al. 2023). research by Maulina Mawaddah in 2021 with the title Efficacy of Message Water Between Leaves to Overcome Vaginal Discharge in Class X Adolescents of Hafsyah Health Vocational School, research by Riski Novita Ratna with the title The effect of vulvar hygiene education video media on the level of knowledge and attitudes of adolescent girls with flour albus (Maulina Mawaddah 2020) Research by Iswatun Iswatun, with the title The Effect of Health Education on Knowledge, Attitudes, and Actions in Preventing Vaginal Discharge in Adolescent Girls concluded that after being given health education. Providing health education is an alternative in improving knowledge, attitudes and actions of adolescents. It is hoped that after that respondents can understand the concept of leukorrhea and can prevent leukorrhea pathology (Iswatun et al. 2021)

Other supporting journals are 5 journals with quasy-experiment research by Miftahul Jannah in 2019 with the title The Effect of Health Education on the Prevention of Tepung Albus in Lhoking Prison, Aceh Besar Regency (Jannah, Fitriani, and Anita

2022), research by Nurhumairah, entitled The Effect of Reproductive Health Education with Multimedia Video Learning and Education on Increasing Knowledge and Attitudes About Prevention of Fluor Pathology Albus Adolescent Girls, (Salmah and Tamar 2020), research by A. Ummu Saadah Mukhtar. Ummu Saadah Mukhtar, with the title Effect of Reproductive Health Education with Multimedia Video Learning Improving Prevention of Fluor Albus Pathology Young Women Behavior, (Mukhtar et al. 2022), research by Uli Anitasari Matanari in 2023 the difference in the efficacy of boiled water of green belt leaves and white soursop leaves in adolescent girls at SMAN 4 Kota Serang Banten (Anitasari Matanari and Rismayanti 2024), research by Risman Tunny with the title Reducing the Onset of Tepung Albus Using Betel Leaf Extract It can be concluded that vaginal discharge before and after being given the treatment of giving betel leaf extract is significantly different or experiencing healing (Tunny, Pelu, and Souliissa 2021).

As an example for laboratory experimental design research by Yolanda Eliza Putri Lubis with the title Effectiveness Test of Ethanol Extract of Sunkist Orange Peel (*Citrus Sinensis* L. Osbeck) Against the Growth of *Candida Albicans* Fungi as the Cause of Fluor Albus a Woman Sunkist orange peel extract has significant antifungal effectiveness against *Candida albicans* fungi and the higher the concentration of extract given, the greater the diameter of the inhibition zone formed. (Lubis and Amir 2020)

Other supporting journals are 2 journals with descriptive research by researcher Nurul Husna with the title Knowledge of prevention of abnormal vaginal discharge (flour albus) in adolescent girls, research by Erin Padilla Siregar with the title The Relationship between the Use of Feminine Cleansing Fluids and Pantyliner with the Causes of Whitening Pathophysical Adolescent Women in Dusun li Village Bakaran Batu District Batang Kuis Deli Serdang Regency (Husna, Ramie, and Marwansyah 2023)

For research Crosssectional research design using a quantitative approach by Ageng Septa Rini with the Effect of Information Sources and the Role of Parents on Vaginal Discharge Prevention Behavior in Adolescent Girls (Rini 2023)

The activities were evaluated using pre-test and post-test questionnaires, as well as education, health, and counseling practices. by Heni Triana with the title Effect of Peer Group Education on Menstrual Hygiene on Knowledge of Prevention of Pruritusvulvae in Adolescent Girls at SMP Muhammadiyah 4 Medan, 1 study The method used in this educational activity uses health education

techniques through lectures and questions and answers through face-to-face or offline by Cintika Yorinda Sebtaleasy with the title Personal Hygiene Behavior Education for Adolescents: Efforts to Prevent Fluor Albus at Pondok Pesantren Sabiliil Muttaqien. 1 pseudo-experimental research study by Rosa Purwanti with the title Effectiveness of red betel leaf decoction (*piper crocantum*) on reducing symptoms of flour albus in high school students. 1 research using the Study Case Literature method (Triana, Lilis Pujiati, and Suhermi 2024)

Review with a case study approach by Angga Aprianti in 2023 with the title Effectiveness of Red Betel Boil and Green Betel Boil in the Management of Tepung Albus in Adolescent Girls at PMB Herlina (Aprianti 2024) As an example for research The research method used is RnD with a 4D design. research by Cahaya Hidayati states that the development of booklet media on Flour Albus prevention education for adolescent girls in secondary schools has been validated by experts with results that are feasible to use and have a significant positive impact on increasing students' knowledge of reproductive health problems (Cahaya Hidayati, Ei Wah Phyu Thet, and Phonethipsavanh Nouanthong 2024) using a Cross Sectional Study approach. by Aulia Mutmainnah, the results obtained in this study are that there is a relationship between knowledge about personal hygiene and preventive behavior of flour albus in adolescent girls in Taeng Village, Pallangga District. Therefore, it is advisable for adolescent girls to increase their knowledge by reading books or looking for information on the internet about personal hygiene in the prevention of vaginal discharge and can also ask directly to teachers or parents in order to get the right and correct information about genital personal hygiene. comparable.

comparable to the journal Toru Fitri Khairani because the method used is the same so that the results of the study are a significant increase in knowledge of children who are given health education about the Relationship between Knowledge and Vaginal Discharge (Mutmainnah et al. 2021)

This is in accordance with the journal by Cahaya Hidayati in 2024, The development of booklet media on Tepung Albus prevention education for adolescent girls in secondary schools has been validated by experts with results that are feasible to use and have a significant positive impact on increasing students' knowledge about reproductive health problems. can be concluded The findings show that the use of booklets has succeeded in increasing adolescent girls' awareness of the signs

and symptoms of Tepung Albus, as well as the preventive steps they can take (Cahaya Hidayati et al. 2024)

Knowledge is everything that is known in relation to the learning process. Knowledge is the result of human sensing or the result of someone knowing objects through their senses (eyes, nose, ears, and so on). Many young women do not have knowledge about vaginal discharge today. The lack of knowledge of adolescent girls about flour albus can affect their attitudes that are less concerned with the incidence of vaginal discharge or flour albus they experience.

Another factor that causes low knowledge of adolescents about vaginal discharge is that adolescents consider vaginal infections trivial so they do not seek further information about behaviors that can cause vaginal discharge.

CONCLUSIONS

Knowledge among adolescents about how to care for, behave and keep genital organs clean from vaginal discharge is very important considering the consequences caused by vaginal discharge such as unpleasant odor, itching, providing information to adolescents starting from the surrounding environment, schools, information media and health workers need to be improved considering most of the knowledge of adolescents about the problem of vaginal discharge both the impact, causes, risky habits, and so on is still low. The low knowledge has implications for the attitude of adolescents in preventing

The low knowledge has implications for adolescents' attitudes in preventing vaginal discharge both from the habit of maintaining intimate organ hygiene is still low. This shows that there is a positive relationship between knowledge about vaginal discharge and attitudes and actions taken for prevention. The better the knowledge of adolescents about vaginal discharge, the better the preventive measures taken. Vice versa, if the knowledge of adolescents is low, it will have an impact on the attitude and behavior of adolescents in the management of vaginal discharge prevention. Poor behavior in the management of vaginal discharge is caused by adolescents being exposed to misinformation about vaginal discharge and lack of attention from close people, especially the attention of a mother to provide guidance on the prevention of vaginal discharge.

SUGGESTIONS

The article review suggests that future researchers should conduct a larger review of

various journals and populations to better understand the issue of vaginal discharge in adolescents. Adolescent girls should be encouraged to maintain hygiene by adopting a clean lifestyle. Health services should provide accurate information on how to care for genital organs from vaginal discharge.

REFERENCES

- Anitasari Matanari, Uli, and Tetin Rismayanti. 2024. "Differences In The Effectiveness Of Green Belt Leaf Boiled Water And Soursop Leaves On Which White In Adolescent Girls At SMAN 4 Serang City, Banten, 2023." *International Journal of Health and Pharmaceutical (IJHP)* 4(2):398–404. doi: 10.51601/ijhp.v4i2.317.
- Aprianti, Angga. 2024. "Efektivitas Rebusan Sirih Merah Dan Rebusan Sirih Hijau Dalam Penatalaksanaan Flour Albus Pada Remaja Putri Di PMB Herlina Tahun 2023." 4:6184–93.
- Asri, Uswatun Hasanah, Tiara Dini Harlita, and Sresta Azahra. 2023. "Identifikasi Jamur Candida Albicans Pada Urine Mahasiswi Diploma Iii Teknologi Laboratorium Medis Pengguna Pantyliner." *Jurnal Kesehatan Tambusai* 4(3):324–32.
- Astutie, Cintya Septiana Andri. n.d. "Darmala, E. (2018). Hubungan Pengetahuan Dan Sikap Remaja Putri Dengan Kejadian Flour Albus Pada Remaja Putri Di Smp Negeri 4 Kuranji Kecamatan Guguak, Kabupaten 50 Kota Tahun 2018. Sekolah Tinggi Ilmukesehatan Perintis Padang. Tersedia Pada: <https://doi.org/10.51601/ijhp.v4i2.317>."
- Cahaya Hidayati, Ei Wah Phyu Thet, and Phonethipsavanh Nouanthong. 2024. "Evaluation: Media Booklet About Education on Prevention of Flour Albus for Teenage Girl." *Journal Evaluation in Education (JEE)* 5(2):50–60. doi: 10.37251/jee.v5i2.928.
- Chitra Dewi, Marisna Eka Yulianita, and Annisa Khaerani. 2022. "Hubungan Pengetahuan Dan Keterpaparan Informasi Dengan Tindakan Pencegahan Keputihan Pada Remaja Putri Di SMK Wahyu 1 Makassar." *Jurnal Kesehatan Panrita Husada* 7(2):152–63. doi: 10.37362/jkph.v7i2.590.
- Eka Noviyanti, Sunanto, and Iis Hanifah. 2023. "Effect of Health Education Using Audiovisual Media on Level of Knowledge about Leucorrhea (Fluor Albus)." *Health and Technology Journal (HTechJ)* 1(2):118–24. doi: 10.53713/htechj.v1i2.15.
- Hidayah, Ardiyanti, Wahyu Anjas Sari, and Yulita Ardiana Peu. 2021. "Hubungan Penggunaan

- Sabun Pembersih Kewanitaan Dengan Kejadian Keputihan Pada Wanita Usia Subur Di Rw 06 Desa Kletek Kecamatan Taman Kabupaten Sidoarjo." *Hotspital Majapahit* 13(1):122–31.
- Husna, Nurul, Agustine Ramie, and Marwansyah Marwansyah. 2023. "Pengetahuan Pencegahan Keputihan Abnormal (Flour Albus) Pada Remaja Putri." *Jurnal Ilmu Kesehatan Insan Sehat* 11(2):44–51. doi: 10.54004/jikis.v11i2.127.
- Ilmiawati, Helmy, and Kuntoro Kuntoro. 2017. "Pengetahuan Personal Hygiene Remaja Putri Pada Kasus Keputihan." *Jurnal Biometrika Dan Kependudukan* 5(1):43. doi: 10.20473/jbk.v5i1.2016.43-51.
- Iswatun, Iswatun, Kusnanto Kusnanto, Abd Nasir, Lailatul Fadliyah, Endah Sri Wijayanti, Joko Susanto, Amellia Mardhika, Arifal Aris, and Ni wayan Suniyadewi. 2021. "The Effect of Health Education on Knowledge, Attitudes, and Actions in Prevention of Leukorrhea in Adolescent Girls." *Journal of International Dental and Medical Research* 14(3):1240–45.
- Jannah, Miftahul, Fitriani, and Anita. 2022. "The Effect of Health Education on the Prevention of Flour Albus in Lhoknga Prison, the District of Aceh Besar." *Journal of Midwifery and Community Health (JMCH)* 1(1):20–24.
- Lubis, Y. E. P., and W. P. Amir. 2020. "Effectiveness Test of Sunkist Orange Peel Ethanol Extract (Citrus Sinensis L. Osbeck) on the Growth of Candida Albicans Mushrooms as a Cause of Fluor Albus" *International Journal of Scientific Engineering and Science* 4(11):12–15.
- Maulina Mawaddah, Eka Sylviana Siregar. 2020. "Science Midwifery The Effectiveness Of Between Leaves Booked Water For Overcoming Leucorrhoea In Grade X Adolescents At Hafsyah Medan Health Vocational School In 2021." *Science Midwifery* 10(2):2721–9453.
- Miftachul, Mohamad, Adheniya Syafirasari, and Andi Hayyun. 2023. "Pengetahuan Dan Sikap Remaja Putri Dalam Pencegahan Keputihan Setelah Diberikan Edukasi." *Jurnal Keperawatan Cikini* 4(2):109–16.
- Monintja, Hans Eldith, and Adinta Anandani. 2020. "Characteristics of Pathological Fluor Albus on Outpatient in Permata Serdang Mother and Child Hospital Year 2019." *Muhammadiyah Medical Journal* 1(2):57. doi: 10.24853/mmj.1.2.57-62.
- Mukhtar, A. Ummu Saadah, Budu Budu, Yusring Sanusi B, Nasruddin Andi Mappawere, and Azniah Azniah. 2022. "Effect of Reproductive Health Education With Multimedia Video Learning on the Improvement of Fluor Albus Prevention Behavior Young Woman Pathologist." *International Journal of Health & Medical Sciences* 5(1):75–79. doi: 10.21744/ijhms.v5n1.1841.
- Mulyanti, Lia, Dewi Puspitaningrum, Alya Aulia Rahmayani, and Hamnah Latifah. 2022. "Peningkatan Pengetahuan Dengan Pendidikan Kesehatan Tentang Keputihan (Leukorrhea) Pada Wanita Usia Subur Di Kelurahan Sendangguwo Semarang." *Jurnal Salingka Abdimas* 2(1):107–10. doi: 10.31869/jsam.v2i1.3357.
- Mutmainnah, Aulia, Agustina Ningsi, Wirawati Amin, and Indriari. 2021. "The Relationship of Knowledge about Personal Hygiene with Preventive Behavior of Flour Albus in Young Women in Taeng Village, Pallangga District." *Media Kesehatan Politeknik Kesehatan Makassar XVI*(2):353–61.
- Nurchandra, Domas, Mirawati Mirawati, and Fika Aulia. 2020. "Pendidikan Kesehatan Tentang Personal Hygiene Pada Remaja Putri Di Smp 1 Muhammadiyah Banjarmasin." *Jurnal Pengabdian Masyarakat Kebidanan* 2(1):31. doi: 10.26714/jpmk.v2i1.5368.
- St. Nurul Izzah Habibarrahan, Muhammad Khidri Alwi, and Nurul Ulfah Mutthalib. 2021. "Faktor Yang Berhubungan Dengan Gangguan Keputihan Pada Siswi Di MA Muhammadiyah Sibatua Pangkajene." *Window of Public Health Journal* 2(6):966–75. doi: 10.33096/woph.v2i6.306.
- Oriza, Novalita, and Roslianan Yulianty. 2024. "Faktor Yang Berhubungan Dengan Kejadian Keputihan Pada Remaja Putri Di Sekolah Menengah Pertama." *Lentera Perawat* 5(1):110–15. doi: 10.52235/lp.v5i1.271.
- Rini, Ageng Septa. 2023. "The Influence of Sources of Information and the Role of Parents on Vaginal Discharge Prevention Behavior in Adolescent Girls." *International Journal of Public Health Excellence (IJPHE)* 3(1):312–19. doi: 10.55299/ijphe.v3i1.662.
- Riza Tsalatsatul Mufida, Erma Retnaningtyas, Miftakhur Rohmah, and Siti Julaichah. 2023. "Knowledge Analysis of Women of Childbearing Age (15-49 Years) about Personality Hygiene with the Incident of Vaginal Discharge in the Krian Sidoarjo Health Center Area." *STRADA Jurnal Ilmiah Kesehatan* 12(1):57–63. doi:

- 10.30994/sjik.v12i1.1045.
- Salmah, Ummu, and Muhammad Tamar. 2020. "International Journal of Multicultural and Multireligious Understanding The Effect of Reproductive Health Education with Video Learning Multimedia and Education on the Increasing of Knowledge and Attitude About Prevention of Fluor Albus Pathology of Femal." *International Journal of ...* 3:161–67.
- Triana, Heni, Lilis Pujiati, and Suhermi Suhermi. 2024. "The Influence of Peer Group Education on Menstrual Hygiene on Knowledge of Pruritusvulvae Prevention in Adolescent Girls at SMP Muhammadiyah 4 Medan." *International Journal of Public Health Excellence (IJPHE)* 3(2):479–86. doi: 10.55299/ijphe.v3i2.746.
- Tunny, Risman, Aulia Deby Pelu, and Jarmil Souliissa. 2021. "Reduce the Incidence of Flour Albus Using the Betel Leaves Extract." *Aloha International Journal of Multidisciplinary Advancement (AIJMU)* 3(4):95. doi: 10.33846/aijmu30404.
- Umami, Afriza, Edit Paulik, Regina Molnár, and Bhisma Murti. 2022. "The Relationship between Genital Hygiene Behaviors and Genital Infections among Women: A Systematic Review." *Jurnal Ners* 17(1):89–101. doi: 10.20473/jn.v17i1.34402.
- Wanito Ambarsari, Dwi. 2022. "Penggunaan Celana Ketat Terhadap Keluhan Fluor Albus Pada Mahasiswi Universitas Widya Dharma Klaten." *Jurnal Sabhanga* 4(1):8–14.
- Winna Kurnia Sari. AZ. 2020. "IDENTIFIKASI FAKTOR PENYEBAB KEPUTIHAN PADA REMAJA PUTRI." *Winna Kurnia Sari. AZ* 5(3):248–53.

PROXIMATE AND PHYTOCHEMICAL ANALYSIS OF MORINGA LEAF FLOUR AS AN EFFORT TO INCREASE BREAST MILK

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ABSTRAK : ANALISIS PROKSIMAT DAN FITOKIMIA TEPUNG DAUN KELOR SEBAGAI UPAYA MEMPERBANYAK ASI

Latar belakang: Angka Kematian Bayi (AKB) di Indonesia masih tinggi, dimana sebagian besar disebabkan oleh faktor nutrisi. Beberapa penyakit yang timbul akibat malnutrisi antara lain pneumonia, diare, dan perinatal. Pemberian Air Susu Ibu (ASI) eksklusif mampu menurunkan angka kesakitan dan kematian bayi. Alasan yang paling sering ditemukan pada ibu menyusui yang menghentikan pemberian ASI yaitu karena produksi ASI yang kurang. Pemanfaatan tanaman/sayuran yang berfungsi sebagai galaktogogue dapat digunakan sebagai alternatif untuk meningkatkan produksi ASI. Daun kelor merupakan salah satu tanaman yang sering digunakan masyarakat untuk meningkatkan produksi ASI. Pemanfaatan tepung daun kelor dalam bentuk puding dapat menjadi salah satu alternatif untuk mengatasi permasalahan ketidakseimbangan nutrisi yang dihadapi oleh sebagian besar ibu menyusui untuk meningkatkan produksi ASI.

Tujuan: Tujuan penelitian ini yaitu mengidentifikasi kandungan kadar air, kadar abu, protein, lemak, dan karbohidrat. Melakukan skrining fitokimia pada tepung daun kelor.

Metode: Metode dalam penelitian ini yaitu melakukan uji laboratorium pada tepung daun kelor sebanyak 100 gram. Melakukan analisis proksimat pada tepung daun kelor meliputi kadar air, kadar abu, protein, lemak, dan karbohidrat. Melakukan skrining fitokimia pada tepung daun kelor untuk mengetahui kadar alkaloid dan steroid pada tepung daun kelor

Hasil: Hasil analisis kandungan proksimat diperoleh hasil kadar protein 22,08%, kadar lemak 5,90%, kadar air 1,11%, kadar abu 9,78%, kadar karbohidrat 61,13%. Hasil skrining fitokimia didapatkan tepung daun kelor memiliki kandungan alkaloid, steroid, dan terpenoid.

Simpulan: Pemanfaatan tepung daun kelor merupakan salah satu alternatif yang dapat digunakan sebagai bahan dasar puding untuk mengatasi masalah produksi ASI yang kurang.

Saran: Peneliti selanjutnya disarankan dapat melakukan penelitian terkait inovasi pengembangan pengolahan daun kelor terhadap kelancaran ASI yang langsung diaplikasikan pada ibu-ibu menyusui untuk mencegah kegagalan pemberian ASI eksklusif karena produksi ASI kurang.

Kata Kunci: Analisis proksimat dan fitokimia, Tepung Daun kelor, Produksi ASI

ABSTRACT

Background: The Infant Mortality Rate (IMR) in Indonesia is still high, most of which is caused by nutritional factors. Some diseases that arise due to malnutrition include pneumonia, diarrhea and perinatal. Providing exclusive breast milk (ASI) can reduce infant morbidity and mortality. The most common reason found in breastfeeding mothers who stop breastfeeding is due to insufficient milk production. The use of plants/vegetables that function as galactogogues can be used as an alternative to increase breast milk production. Moringa leaves are one of the plants that people often use to increase breast milk production. Utilizing Moringa leaf flour in the form of pudding can be an alternative to overcome the problem of nutritional imbalance faced by most breastfeeding mothers to increase breast milk production.

Objective: The aim of this research is to identify the water content, ash content, protein, fat and carbohydrates. Carrying out phytochemical screening on Moringa leaf flour.

Method: The method in this research is to carry out laboratory tests on 100 grams of Moringa leaf flour. Carrying out proximate analysis of Moringa leaf flour includes water content, ash content, protein, fat and carbohydrates. Carry out phytochemical screening on Moringa leaf flour to determine the levels of alkaloids and steroids in Moringa leaf flour.

Results: The results of the proximate content analysis showed that the protein content was 22.08%, the fat content was 5.90%, the water content was 1.11%, the ash content was 9.78%, and the carbohydrate content was 61.13%. The results of phytochemical screening showed that Moringa leaf flour contains alkaloids, steroids and terpenoids.

Conclusion: The use of Moringa leaf flour is an alternative that can be used as a base for pudding to overcome the problem of insufficient breast milk production.

Suggestion : Further researchers are advised to carry out research related to innovations in developing Moringa leaf processing for smooth breastfeeding which can be directly applied to breastfeeding mothers to prevent failure in exclusive breastfeeding due to insufficient breast milk production.

Keywords: *Breast Milk Production, Moringa Leaf Flour , Proximate and phytochemical analysis*

INTRODUCTION

The infant mortality rate (IMR) is an indicator of the success of maternal and child health programs. Based on data from the Central Statistics Agency (BPS) in 2022, the Infant Mortality Rate (IMR) in Indonesia is 16.9 per 1,000 live births, while the Infant Mortality Rate in Indonesia is 19.83 per 1,000 live births. IMR in NTB in 2022 will be 8.7% and the infant mortality rate will be 0.3%(Badan Pusat Statistik, 2021).

Factors causing death of infants and toddlers are related to nutritional factors. Some diseases that arise due to malnutrition include pneumonia, diarrhea, malaria, tetanus, neurological disorders, gastrointestinal disorders, etc. Most post-neonatal under-five deaths in Indonesia in 2022 will be due to pneumonia, namely 14.5%. There were also post-neonatal under-five deaths due to diarrhea of 9.8%, other congenital abnormalities 0.5%, neurological diseases 0.9%, and other factors 73.9%(Kemenkes RI, 2022). The most common causes of IMR in NTB in 2022 are pneumonia 37.6%, perinatal conditions 10.3%, diarrhea 7.8%, and other factors 28.5%(Dinkes Prov NTB, 2023).

Breast milk is the best first and main nutrition for babies. The World Health Organization (WHO) recommends that all babies should receive breast milk (ASI) exclusively from an early age. The benefits of exclusive breastfeeding are in line with one of the goals of the Millennium Development Goals (MDGs), namely reducing child mortality rates and improving maternal health(Dewi, 2022).

Exclusive breastfeeding coverage in Indonesia will decrease in 2022. The decline in exclusive breastfeeding coverage is shown in the results of the 2022 Indonesian Nutrition Status Survey (SSGI). Coverage of exclusive breastfeeding for six months in 2021 was recorded at 48.2%. That figure decreases significantly in 2022 with coverage of 16.7%. This should be a concern because the provision of formula milk will increase from 45.2% in 2021 to 61.6% in 2022(Kemenkes RI, 2022).

Exclusive breastfeeding coverage in the NTB region in 2022 will be 84.4% and will decrease in 2023 to 82.7%(Dinkes Prov NTB, 2023).

Insufficient breast milk production is a common complaint expressed by mothers, especially in the first week of postpartum(Asnidawati & Ramdhan, 2021; Margareth ZH, 2016). Zakaria's research (2016) reported that 38% of breastfeeding mothers stopped breastfeeding on the grounds that breast milk production was interrupted or there was a lack of breast milk production(Zakaria et al., 2016b). Other research also shows that the majority (69.23%) of mothers complained that the amount of breast milk was insufficient in the first week after giving birth (Indrayani D, Gustirini R, 2015).

Efforts to increase breast milk coverage can be done using several methods, namely pharmacological methods and non-pharmacological methods. Pharmacological methods tend to be expensive, while non-pharmacological methods to increase breast milk production can be obtained from plants or what are usually called Family Medicinal Plants (TOGA)(Yuliani, 2021).

If breast milk production is lacking, people usually use plants that are believed to increase breast milk production (galactagogue) such as katuk leaves (*Sauropus androgynus*), fenugreek seeds (*Trigonella foenum-graceum*), moringa leaves (*Moringa oleifera*), papaya leaves (*Carica papaya* L) and leaves. cumin or torbangun (*Coleus ambonicius*)(Monika, 2020). Penelitianyang dilakukan Pratiwi (2023) menunjukkan daun kelor memiliki kandungan senyawa alkaloid dan steroid, dimana kandungan tersebut dapat membantu meningkatkan produksi ASI(Pratiwi YS, Handayani S, 2023).

Moringa leaves (*Moringa oleifera*) contain steroids which, together with phytosterols, can increase the hormone prolactin in the serum through stimulation of the secretory cells of the mammary glands thereby stimulating alveolar epithelial cells to increase breast milk production. The content of

alkaloid compounds, namely trigoneline, works synergistically with the hormone oxytocin which can trigger, maintain, facilitate and increase breast milk production in breastfeeding mothers (Zakaria et al., 2016a). Apart from that, Moringa leaves also contain carbohydrates, protein, fat, as well as various minerals and vitamins. The protein contained in Moringa leaves is known to affect breast milk production (Citra, 2019). Moringa leaves also contain the mineral calcium as a micronutrient which is known to influence the production of the hormone prolactin.

Many studies have been conducted analyzing the role of Moringa leaves on breast milk production. These studies are known to have used Moringa leaves as a galactagogue in different processed forms. Handayani's research (2021) shows that 38.2% of breastfeeding mothers use Moringa leaves as a breast milk enhancer which is processed into a clear vegetable (Handayani, 2021). This is in line with research by Pratiwi (2023) which shows that the clear vegetable Moringa leaves contain alkaloids and steroids which play a role in increasing and facilitating breast milk production (Pratiwi, 2023).

Processing Moringa leaves into clear vegetables is widely used in society, both by the general public and breastfeeding mothers. Other research explains that many breastfeeding mothers feel bored with processing Moringa leaves into clear vegetables, and don't like it because the unpleasant aroma of Moringa leaves is still there (Aliyanto & Rosmadewi, 2019). So other processed alternatives are needed to reduce the unpleasant aroma of Moringa leaves, one of which is in the form of processed pudding (Maharani, 2020).

Utilizing Moringa leaf flour in the form of pudding can be an alternative to overcome the problem of nutritional imbalance faced by most breastfeeding mothers to increase breast milk production. Moringa leaf flour is rich in nutrition, especially its carbohydrate content (Vittal dkk., 2018), so it has been widely used and processed as food. Therefore, researchers are interested in researching "Proximate and Phytochemical Analysis of Moringa Leaf Flour as an Effort to Increase Breast Milk".

RESEARCH METHODS

This research is qualitative research by describing the results of the analysis. There are two stages of this research, namely making Moringa leaf flour and analyzing the proximate content of Moringa leaf flour. Proximate analysis and phytochemical screening were carried out at the Analytical Chemistry Laboratory, Faculty of Mathematics and Natural Sciences, Mataram University.

1. Flour Making Process

a. Preparation of tools and materials

The material used in this research was Moringa leaves obtained in Dasan Baru Hamlet, Sukarara Village, Central Lombok Regency, NTB Province. The parts used are young to old Moringa leaves.

The tools used for making flour are a triple beam scale, blender, basin, 80 mesh flour sieve, pan, container box, and stove.

b. How to Make Moringa Leaf Flour

Boiling boiling water, put the Moringa leaves in a pan with a blanching temperature of 82-83°C for 3-5 minutes. The Moringa leaves are removed, drained and then dried in the sun. Once dry, the Moringa leaves are ground with a blender and sifted with an 80 mesh sieve to make fine Moringa flour. Prepare a pan filled with water, and boil it (Widowati H, Faridah S.M, n.d.).

2. Proximate Analysis and Phytochemical Screening of Moringa Leaf Flour

Proximate analysis of 100 grams of Moringa leaf flour includes water content, ash content, protein, fat and carbohydrates (Widarta et al., 2013). Phytochemical screening was carried out to determine the levels of alkaloids and steroids in Moringa leaf flour (Dwika Pratama, 2016).

RESEARCH RESULTS

Proximate analysis and phytochemical screening on Moringa leaf flour was carried out at the Analytical Chemistry Laboratory, Faculty of Mathematics and Natural Sciences, Mataram University on January 9 2024. The following are the results of proximate analysis and phytochemical screening on Moringa leaf flour:

Proximate Test of Moringa Leaf Flour

Tabel 1
Hasil analisis proksimat tepung daun kelor per 100 gram

Characteristics	Moringa Leaf Flour	
	Results (%)	Condition (%)
Kadar protein	22,08	23,62
Kadar lemak	5,90	7,28
Kadar air	1,11	6,96
Kadar abu	9,78	10,59
Kadar karbohidrat	61,13	47,96

Phytochemical Screening of Moringa Leaf Flour

Tabel 2
Results of Phytochemical Screening of Moringa Leaf Flour

Group	Observation	Result
Alcaloid	Formation of a brown precipitate	+++
SteroidS	Brownish green becomes purplish green	+
Terpenoid	Brownish green becomes blackish blue	+

DISCUSSIONS

Protein Level

The high protein content in Moringa leaf flour contributes as a building block and regulatory agent to the human body. Protein is a very important food substance for the body (Apriyanto, 2021). As a building block, protein is a building block for new tissue that always occurs in the body. The higher the protein content in the food, the better the nutritional value of the food for humans (Kustiani et al., 2022). Protein can come from animal and vegetable sources. The results of the analysis of protein content in Moringa leaf flour in this study were 22.08%. Another research by Yunita (2022) showed the same thing, namely a protein content of 27.27%. However, this value is greater than the results of research conducted by Kustiani, namely 1.64% (Kustiani et al., 2022).

Fat Level

Fat is an important parameter to monitor because if the fat content in food is too much, it can cause negative impacts such as obesity, high cholesterol, high blood pressure, coronary heart disease and others. Therefore, WHO calls for reducing total fat intake to less than 30%. The fat content in Moringa leaf flour is 5.90%, this does not comply with the requirements in accordance with Food and Drug Supervisory Agency (BPOM) Regulation Number 34 of 2019 concerning food categories (BPOM RI, 2019). The fat content produced in Moringa leaf flour in this study was greater than the fat content in Yunita's research (2022) of 7.28% (Yunita et al., 2022).

Air Level

The water content in food products functions to form and maintain the texture of food, and plays a role in determining the taste, weight and shelf life of food products. If the water content is excessive, the product texture will become soft, and can even cause clumping and blockages in pipes during the production process. The greater the water content in food products also triggers the speed of bacteria to grow which can cause product damage (Rahmi, 2020). The results of the analysis of water content in Moringa leaf flour in this study were 1.11%. Previous research conducted by Augustyn (2017) showed that the water content of Moringa leaf flour was 9.57% (Augustyn et al., 2017).

Abu Level

Ash content is used to evaluate the nutritional value of food ingredients and shows the total minerals that can be toxic contained in the ingredients, where the higher the ash content, the worse the quality of the food ingredients (Rahmi, 2020). Kadar abu merupakan campuran dari komponen an-organik atau mineral yang terdapat pada suatu bahan makanan olahan. Hasil analisis kadar abu tepung daun kelor dalam penelitian ini relatif tinggi yakni 9,78%. Hal ini dikarenakan penurunan kadar air dapat mempengaruhi terhadap peningkatan nilai nutrisi termasuk kadar abu. Kadar abu bahan tanaman sangat bervariasi, tergantung spesies tanaman dan bagian tanaman. Kadar abu pada analisis proksimat tidak memberikan nilai nutrisi yang penting.

Carbohydrate Levels

Carbohydrates are the main source of nutrients in the menu of most Indonesian people. Carbohydrates also have an important role in determining the characteristics of food ingredients, such as taste, color, texture and so on (Y. Rahmi, 2020). Carbohydrates can fulfill 60-70% of the body's energy needs. The analysis results showed that the carbohydrate content of Moringa leaf flour was relatively high. The results of the analysis of carbohydrate content in Moringa leaf flour were 61.13%. The carbohydrate content in this study was greater than that of previous researchers, namely 38.2% (Gizi et al., 2019).

Phytochemical Screening of Moringa Leaf Flour

The results of phytochemical tests carried out in this study showed that Moringa leaf flour contains alkaloids, steroids and terpenoids. This is in line with research conducted by Tekle (2015) which shows the content of alkaloids, tannins, flavonoids, polyphenols, saponins and essential oils in Moringa leaf extract (Tekle et al., 2015). Similar research also shows that there are alkaloids, flavonoids, saponins, phenols, steroids/triterpenoids, and tannins in Moringa leaf extract (Dwika et al., 2016; Yulianto, 2020; Zulfiah et al, 2020).

The alkaloids and steroids in Moringa leaves are part of the phytosterol compound which functions to increase and facilitate breast milk production (lactagogum effect). Moringa leaves (Moringa oleifera) are a galactagogue food that has a high micronutrient content compared to other galactagogue foods. The nutritional content in Moringa leaves such as protein, carbohydrates, fat, alkaloid compounds and steroids plays a role in the prolactin reflex and increases levels of the hormone prolactin, thus stimulating the alveoli to produce breast milk (Prayekti et al., 2021).

Moringa leaves (Moringa oleifera) is a galactagogue food that has a high micronutrient content compared to other galactagogue foods. The nutritional content such as phytosterols, alkaloids, saponins, polyphenols and steroids (lactagogue effect) plays a role in the prolactin reflex and increases prolactin hormone levels, so that stimulates the alveoli to produce breast milk (Aliyanto & Rosmadewi, 2019; Damayanti A, Widiawati I, 2022; Rochmayanti NS, 2022).

The alkaloid content in Moringa leaves works synergistically with the hormone oxytocin. Alkaloids have a function that directly acts on all smooth muscles. When smooth muscles contract, milk will be ejected and the number and diameter of the alveoli will increase on average in proportion to the increase in milk produced. (Rosalinda Sinaga, 2020).

CONCLUSIONS

The use of Moringa leaves is an alternative that can be used to overcome the problem of insufficient breast milk production, apart from being cheap and easy to obtain. Processing Moringa leaves into flour is an alternative that can be used as a basic ingredient for making pudding in order to increase breast milk production in breastfeeding mothers.

SUGGESTION

Further researchers are advised to carry out research related to innovations in developing Moringa leaf processing for smooth breastfeeding which can be directly applied to breastfeeding mothers to prevent failure in exclusive breastfeeding due to insufficient breast milk production.

REFERENCES

- Aliyanto, W., & Rosmadewi, R. (2019). Efektifitas Sayur Pepaya Muda dan Sayur Daun Kelor terhadap Produksi ASI pada Ibu Post Partum Primipara. *Jurnal Kesehatan*, 10(1), 84. <https://doi.org/10.26630/jk.v10i1.1211>
- Apriyanto, M. (2021). *Buku Ajar: Kimia Pangan Dr. Nuta Media Jl. P. Romo, No. 19 Kotagede Jogjakarta/ Jl. Nyi Wiji Adhisoro, Prenggan Kotagede Yogyakarta* nutamediajogja@gmail.com; 081228153789 @2020,.
- Asnidawati, A., & Ramdhan, S. (2021). Hambatan Pemberian ASI Eksklusif Pada Bayi Usia 0-6 Bulan. *Jurnal Ilmiah Kesehatan Sandi Husada*, 10(1), 156–162. <https://doi.org/10.35816/jiskh.v10i1.548>
- Augustyn, G. H., Cynthia, H., Tuhumury, D., & Dahoklory, M. (2017). Terhadap Karakteristik Organoleptik Dan Kimia Biskuit Mocaf (Modified Cassava Flour) The Effect of the Addition of Moringa (Moringa oleifera) Leaf Flour on the Organoleptic and Chemical Properties of MOCAF (Modified Cassava Flour) Biscuits. 6(2), 52–58. <https://doi.org/10.30598/jagritekno.2017.6.2.52>
- Badan Pengawasan Obat dan Makanan Republik Indonesia (BPOM RI). (2019). *Peraturan Kepala Badan Pengawasan Obat dan Makanan Nomor 34 tahun 2019 Tentang Kategori Kategori Pangan. Pusat Pengujian Obat dan Makanan. Jakarta.*
- Badan Pusat Statistik. (2021). *Badan Pusat Statistik. (2021). Sensus Penduduk 2020. Bps.Go.Id, 27, 1–52.*

- <https://Papua.Bps.Go.Id/Pressrelease/2018/05/07/336/Indeks-Pembangunan-Manusia-Provinsi-Papua-Tahun-2017.Html>.
Bps.Go.Id, 27, 1–52.
- Citra, K. (2019). Kandungan Nutrisi Tanaman Kelor. In *Fakultas Farmasi Universitas Surabaya* (Vol. 44, Issue 8).
- Damayanti A, Widiawati I. (2022). Efektivitas Pemberian Ekstrak Daun Kelor (Moringa Oleifera) Terhadap Produksi Asi Dan Kenaikan the Effectiveness of Moringa Oleifera Leaf Extract on. *Jurnal Kesehatan Siliwangi*, 2(3), 861–869. <https://jurnal.polkesban.ac.id/index.php/jks/article/view/788>
- Dewi, C. K. (2022). *Nutrisi atau makanan terbaik untuk bayi umur 0-6 bulan adalah ASI*.
- Dinkes Prov NTB. (2023). *NTB Satu Data*.
- Dwika, W., Putra, P., Agung, A., Oka Dharmayudha, G., & Sudimartini, L. M. (2016). Identifikasi Senyawa Kimia Ekstrak Etanol Daun Kelor (Moringa oleifera L) di Bali (Identification Of Chemical Compounds Ethanol Extract Leaf Moringa (Moringa Oleifera L) IN BALI). *Indonesia Medicus Veterinus Oktober*, 5(5), 464–473.
- Gizi, P. M., Basah, M., Kelor, D., Oleifera, M., Rafidah, G., & Azizah, T. A. (2019). *Indonesian Journal of Human Nutrition*. 10–21.
- Handayani, T. E. et al. (2021). Pemanfaatan Tanaman Lokal Sebagai Pelancar ASI (Galaktagogue).
- I Wayan Dwika Pratama Putra, Anak Agung Gde Oka Dharmayudha, L. M. S. (2016). Identifikasi Senyawa Kimia Ekstrak Etanol Daun Kelor (Moringa oleifera L) di Bali. *Indonesia Medicus Veterinus Oktober*, 5(5), 464–473.
- Indrayani D, Gustirini R, H. S. (2015). *Survei Pendahuluan tentang Pengalaman Menyusui dan Upaya untuk Meningkatkan Produksi ASI*.
- Kemenkes RI. (2022). *Laporan Akuntabilitas Kinerja Instansi Pemerintah Tahun 2022*.
- Kustiani, A., Gz, S., Si, M., Adyas, A., Samsu, I., Nurdin, U., Sc, M., Indriani, I. Y., Sc, M., Riset, D., Masyarakat, K., Jendral, D., Tinggi, P., Teknologi, R., & Pendidikan, K. (2022). *Formulasi , Analisis Sensori , Dan Evaluasi Zat Gizi Makanan Selingan “ by Product ” Tepung Daun Kelor Sebagai Alternatif Makanan Bergizi Ibu Hamil Dalam Rangka Pencegahan Kejadian Stunting Sejak Dini Ketua*.
- Maharani, S. S. (2020). *Pengaruh Pemberian Puding Daun Kelor pada Ibu Menyusui terhadap Frekuensi dan Lama Menyusui Bayi di Wilayah Puskesmas Medan Johor*.
- Margareth ZH. (2016). *Asuhan Kehamilan, Persalinan, dan Nifas*. Nuha Medika.
- Monika, N. L. G. M. (2020). Potensi Tanaman Lokal Sebagai Galaktagogue Herbal Untuk Meningkatkan Produksi ASI. *Emasains : Jurnal Edukasi Matematika Dan Sains*, IX(Vol. 9 No. 1 (2020): Vol 9 NO 1 (2020) : Maret 2020), 104–112.
- Pratiwi YS, Handayani S, F. N. (2023). Identification Of Alkaloids And Steroids In Moringa Oleifera Leaves As A Breastfeeding. *Jurnal Kebidanan Malahayati*, 2(1), 53–57.
- Pratiwi, Y. S. (2023). Skrining Fitokimia Sayur Bening Daun Kelor (Moringa Oleifera). *Profesional Health Journal*, 5(1), 139–146.
- Prayekti, I. S., Thaha, A. R., Citrakesumasari, Indriyari, R., & Healthy, H. (2021). Efektivitas Daun Kelor (Moringa Oleifera) Sebagai Galaktogog Pada Ibu Menyusui : An Update Systematic Review Effect. *JGMI: The Journal of Indonesian Community Nutrition Vol. 10 No. 2. 2021*, 10(2), 194–207.
- Rahmi, Y. (2020). Profil Mutu Gizi, Fisik, dan Organoleptik Mie Basah dengan Tepung Daun Kelor (Moringa Oleifera). *Indonesian Journal of Human Nutrition*, 7(2), 139–152.
- Rochmayanti NS. (2022). Pengaruh Moringa Oleifera Terhadap Kelancaran Produksi Asi Pada Ibu Menyusui Kurang dari 7 Hari di PMB Afah Fahmi, Amd.Keb. *Jurnal Ilmiah Obsgin*, 14(3), 63–69.
- Rosalinda Sinaga, T. (2020). Manfaat Buah Pepaya Terhadap Kelancaran Proses Menyusui Pada Ibu Nifas. *Jurnal Penelitian Perawat Profesional*, 2, 301–308. <http://jurnal.globalhealthsciencegroup.com/index.php/JPPP>.
- Tekle, A., Belay, A., Kelem, K., W/Yohannes, M., Wodajo, B., & Tesfaye, Y. (2015). Nutritional Profile of Moringa stenopetala Species Samples Collected from Different Places in Ethiopia. *European Journal of Nutrition & Food Safety*, 5(5), 1100–1101. <https://doi.org/10.9734/ejnf/2015/21263>
- Widarta, I. W. R., Suter, I. K., Yusa, N. M., & W, P. A. (2013). *Praktikum Analisis Pangan. Penuntun Praktikum Analisis Pangan*, 1–34.
- Widowati H, Faridah S.M, B. R. . (n.d.). Prosedur pembuatan tepung daun kelor (Moringa Oleifera). *Universitas Muhammadiyah Sidoarjo*.
- Yuliani. (2021). Peningkatan Produksi Asi Ibu

- Menyusui Dengan Tatalaksana Kebidanan Komplementer. *Seminar Nasional Hasil Riset Dan Pengabdian Ke-III*, 17–27.
- Yulianto, S. (2020). Identifikasi Alkaloid Daun Kelor (*Moringa oleifera* L). *Jurnal Kebidanan Dan Kesehatan Tradisional*, 5(1), 55–57. <https://doi.org/10.37341/jkkt.v5i1.136>
- Yunita, L., Rahmiati, B. F., Naktiany, W. C., & Lastyana, W. (2022). *Analisis Kandungan Proksimat Dan Serat Pangan Tepung Daun Kelor dari Kabupaten Kupang Sebagai Pangan Fungsional Analysis of Proximat and Dietary Fiber of Moringa Leaf Flour from Kupang Regency as Functional Food*. 03(02), 44–49.
- Zakaria, Hadju, V., As'ad, S., & Bahar, B. (2016a). Effect of Extract *Moringa Oleifera* on Quantity and Quality of Breastmilk In Lactating Mothers, Infants 0-6 Month. *Jurnal MKMI*, 12(3), 161–169.
- Zakaria, Hadju, V., As'ad, S., & Bahar, B. (2016b). Pengaruh Pemberian Ekstrak Daun Kelor terhadap Kuantitas dan Kualitas Air Susu Ibu (ASI) Pada Ibu Menyusui Bayi 0-6 Bulan. *Jurnal MKMI*, 12(3), 161–169.
- Zulfiah, Herman, Megawati, Hasyim MF, Murniati, A. L. S. et. a. (2020). Uji Identifikasi Senyawa Alkaloid Ekstrak Metanol Daun Kelor (*Moringa oleifera* Lamk) Menggunakan Metode Metode Kromatografi Lapis Tipis. *Jurnal Farmasi Sandi Karsa*, 6(2), 83–87. <https://doi.org/10.36060/jfs.v6i2.75>

THE EFFECT OF EFFLEURAGE MASSAGE ON REDUCING 1st STAGE LABOR PAIN

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ABSTRAK : PENGARUH PIJAT EFFLEURAGE TERHADAP PENURUNAN NYERI PERSALINAN TAHAP 1

Pendahuluan: Nyeri persalinan merupakan kondisi berupa perasaan yang tidak menyenangkan, apabila tidak diatasi dengan baik akan menimbulkan masalah lain yaitu meningkatkan kecemasan. Data di Indonesia didapatkan 21% menyatakan bahwa persalinan yang dialami merupakan persalinan yang menyakitkan karena merasakan nyeri. Salah satu pijatan dalam proses persalinan dengan menerapkan teknik *effleurage*. Stimulasi kulit dengan *effleurage* ini menghasilkan pesan yang dikirim lewat serabut A- δ , serabut yang menghantarkan nyeri cepat, yang mengakibatkan gerbang tertutup sehingga korteks serebri tidak menerima sinyal nyeri dan intensitas nyeri berubah/berkurang.

Tujuan: Untuk mengetahui pengaruh pijat *effleurage* terhadap penurunan nyeri persalinan kala 1 di Wilayah Kerja Puskesmas Bandar Negeri Suoh tahun 2023.

Metode Penelitian: Jenis penelitian ini adalah penelitian kuantitatif yaitu dengan rancangan *pre experiment* dan desain *one group pretest and posttest design*. Populasi dalam penelitian ini adalah seluruh ibu bersalin kala 1 di Wilayah Kerja Puskesmas Bandar Negeri Suoh jumlah Juni-Juli dengan sampel yang berjumlah 30 orang. Teknik sampel yang digunakan yaitu *purposive sampling*. Instrumen pengambilan data dalam penelitian ini menggunakan skala NRS (*Numeric Rating Scale*). Analisis data yang digunakan adalah *wilcoxon*.

Hasil: Hasil penelitian ini menunjukkan bahwa rata-rata nyeri persalinan kala 1 sebelum dilakukan pijat *effleurage* adalah 5,30 dan sesudah dilakukan pijat *effleurage* menurun menjadi 2,5. Hasil uji *wilcoxon* didapatkan p value $0,000 < 0,05$ artinya ada pengaruh pijat *effleurage* terhadap penurunan nyeri persalinan kala 1 di Wilayah Kerja Puskesmas Bandar Negeri Suoh tahun 2023.

Kesimpulan: Ada pengaruh pijat *effleurage* terhadap penurunan nyeri persalinan kala 1 di Wilayah Kerja Puskesmas Bandar Negeri Suoh tahun 2023.

Saran: Dapat menerapkan asuhan dalam penatalaksanaan nyeri kontraksi berupa pijat *effleurage*.

Kata kunci: *Nyeri Persalinan, Effleurage, Postpartum*

ABSTRACT

Introduction: Labor pain is a condition characterized by unpleasant sensations. If not properly managed, it can lead to other issues, such as increased anxiety. The data from Indonesia indicates that 21% of women consider painful labor due to experiencing pain. One of the massage techniques used during labor is *effleurage*, which involves stimulating the skin. *Effleurage* stimulates the A-fibers, which transmit pain signals quickly, leading to a closed gate mechanism that prevents the cortex from receiving pain signals, ultimately altering or reducing the pain intensity.

purpose: To determine the effect of *effleurage* massage on the reduction of pain during the first stage of labor in the working area of Bandar Negeri Suoh Primary Health Care in 2023.

method: This research was a quantitative study with a pre-experimental design and a one-group pretest and posttest design. The population of this study included all mothers experiencing the first stage of labor in the working area of Bandar Negeri Suoh Primary Health Care during June and July, with a sample size of 30 participants. A purposeful sampling technique was used for sample selection. The data collection instrument in this study was the Numeric Rating Scale (NRS), and the data analysis employed the Wilcoxon test.

Results: The results of this study revealed that the average pain score during the first stage of labor before undergoing *effleurage* massage was 5.30, and after the massage, it decreased to 2.5. The Wilcoxon test yielded a p -value of $0.000 < 0.05$, indicating a significant effect of *effleurage* massage on the reduction of pain during the first stage of labor in the working area of Bandar Negeri Suoh Primary Health Care in 2023.

Conclusion: An effect of *effleurage* massage on the reduction of pain during the first stage of labor in the working area of Bandar Negeri Suoh Primary Health Care in 2023.

Suggestion Can apply care in the management of painful contractions in the form of *effleurage* massage.

Keywords: Labor Pain, Effleurage, Postpartum

INTRODUCTION

Childbirth is a natural process experienced by birth mothers and takes place normally in life. Labor can be defined as the process of moving the fetus, placenta, and membranes out of the uterus through the birth canal. This process begins with the opening and dilatation of the cervix due to uterine contractions with regular frequency, duration and strength (Rohani et al, 2014).

During the delivery process, the mother will experience pain. Labor pain is a condition in the form of an unpleasant feeling, if it is not handled properly it will cause other problems, namely increasing anxiety, due to a lack of knowledge and no experience in primigravida mothers when facing labor so that the production of the hormone adrenaline increases and results in vasoconstriction which causes maternal blood flow to the fetus. decreased causing fetal distress such as fetal distress (Utami & Putri, 2020).

Pain in labor is caused by uterine contractions which can result in increased activity of the sympathetic nervous system, changes in blood pressure and heart rate, respiration and skin color. If this is not handled immediately it will increase feelings of worry, tension, fear and stress. The progress of labor is influenced by passanger, passage, position, and psychology. In addition, the progress of labor is also influenced by the position of the fetus. Mother's perception of labor pain can affect the psychological condition of the mother which can ultimately have an impact on labor (Sujiyatini, 2016).

Pain is normal, but if it is not managed properly, it will cause more severe pain, causing problems related to the mother's physical and psychological health. The impact of unresolved pain is not only painful for the mother but also for the fetus. These impacts include post partum depression, bleeding, prolonged labor, increased blood pressure and pulse, in the fetus causing acidosis due to hypoxia in the fetus, as well as psychologically increasing anxiety and fear (Maryunani, 2015).

Bonica's research on 2,700 parturients in 121 obstetric centers from 36 countries found that only 15% of deliveries took place without pain or mild pain, 35% of deliveries were accompanied by moderate pain, 30% of deliveries were accompanied by severe pain and 20% of deliveries were accompanied by very severe pain. (Dartiwen, 2023).

Based on delivery data centers at hospitals throughout Indonesia, it is known that 15% of mothers in Indonesia experience complications

during childbirth and 21% say that the labor they are experiencing is a painful birth because they feel pain, while 63% do not receive information about the preparations that must be made to reduce pain in labor. (Yuliasari and Santriani, 2015).

Emergency problems that affect mortality and morbidity in mothers giving birth at the Bandar Negeri Suoh Health Center, namely 12 (23%) mothers experience anxiety, 3 (5.8%) mothers experience bleeding, 2 (3.8%) mothers experience prolonged labor, and 8 (15.4%) mothers experienced an increase in blood pressure (Puskesmas Bandar Negeri Suoh, 2023).

In addition, due to physiological labor pain, it will cause significant changes, including hyperventilation with severe respiratory alkalosis, increased cardiac output (50-150%), increased blood pressure (20-40%) and can cause psychological changes in the form of post partum depression by 11% - 30% (Dewi, 2013).

The impact of unresolved labor pain is not only painful for the mother but also for the fetus, so management is needed to deal with labor pain. This is so that the mother can adapt and respond positively to labor pain so that it does not cause problems or complications during the delivery process (Maryunani, 2015).

Various methods can be attempted to reduce pain during childbirth, both pharmacologically and non-pharmacologically. Pharmacological treatment includes administration of analgesics and anesthetics to reduce pain. Its use is still limited and officers will not give it if it is not really needed and according to indications. Non-pharmacological methods can be relaxation techniques, hynobirthing, TENS, massage and various other techniques (Maryunani, 2015).

*Massage*Or massage can also reduce labor pain. Massage that is done gently can help the mother feel refreshed, relaxed, and comfortable during labor. Massage also makes mothers feel closer to the people who care for them. The touch of someone who cares and wants to help is a source of strength when the mother is sick, tired or afraid (Rahman, 2017).

Massage during labor can have a relaxing effect. Relaxation experienced by the mother stimulates the brain to reduce levels of the hormone adrenaline and increase the production of oxytocin which is an important factor in the emergence of adequate contractions. There are many techniques to reduce labor pain, one of which is massage. The

massage technique is an instinctive aspect of humans when they feel pain in several parts of the body and this technique causes the first reaction to stroke the painful body part with their hands to reduce pain (Bohari et al, 2022).

One of the massages during labor is by applying the effleurage technique. Effleurage massage can provide a feeling of comfort, cause relaxation, and stimulate the release of endorphins which can relieve pain scientifically. When effleurage massage is carried out, pain inhibits uterine contractions, because at that time the Delta A fibers will close the gate so that the cerebral cortex does not receive pain messages that have been blocked by this counter stimulus massage so that the perception of pain can change (Septianingtiyas et al, 2021).

Based on the results of Elly Susilawati's research (2018) showed that the average active phase normal labor pain scale in Primigravida mothers, with the Massage Effleurage technique was 2 with Std. deviation of 2.44, while the average labor pain scale with Massage Counterpressure is 6 with Std. deviation 6.36. While the results of the statistical test using the Paired T-test obtained a P value of 0.000, it means that the Massage Effleurage technique is more effective than the Massage Counterpressure technique in reducing normal labor pain during the active phase I.

In addition, according to a study by Loisza et al (2022), there were differences in the intensity of maternal pain during the first active phase before and after the Effleurage massage technique was carried out at PMB Bandung City. It can be concluded that

giving massage or Effleurage massage to mothers in labor can reduce the intensity of labor pain.

Based on the results of observations at the Bandar Negeri Suoh Health Center, it was found that almost all mothers felt pain in the first stage of labor. Currently, 2 out of 3 patients stated that they could not stand the pain, especially during the first stage. The mother felt pain in the abdomen, waist, back and radiated spine. So far, the efforts made by midwives at the Bandar Negeri Suoh Health Center are only stroking the mother's stomach or back without a definite purpose, resulting in birth mothers feeling anxious and there is 1 birth mother who is anxious and has no energy in facing the delivery process due to the pain felt causing the mother to be referred to the nearest hospital.

RESEARCH METHODS

This type of research is quantitative research, namely the pre-experimental design and the one group pretest and posttest design. The population in this study were all mothers giving birth in the 1st stage in the Work Area of the Bandar Negeri Suoh Public Health Center from June to July with a sample of 30 people. The sample technique used is purposive sampling. The intervention given is in the form of effleurage massage by means of massage using the palms of the hands that apply gentle pressure over the surface of the body in a circular direction repeatedly during contractions for 20 minutes. The data collection instrument in this study used the NRS (Numeric Rating Scale) scale. The data analysis used is Wilcoxon.

RESEARCH RESULT

Table 1
The average labor pain stage 1 before effleurage massage

Labor Pain	n	Means	Standard Deviation	Min-Max
Before doing effleurage massage	30	5.30	0.750	4-6

Based on the table above, it is known that the average stage 1 labor pain before effleurage massage was performed was 5.30 with a standard

deviation of 0.750, a minimum pain score of 4 and a maximum of 6.

Table 2
The average labor pain stage 1 after effleurage massage

Labor Pain	n	Means	Standard Deviation	Min-Max
After doing the effleurage massage	30	2.50	1.167	1-5

Based on the table above it is known that the average stage 1 labor pain after effleurage massage

is 2.50 with a standard deviation of 1.167, a minimum pain score of 1 and a maximum of 5.

Table 3
Effect of massageffleurageon reducing labor pain in the 1st stage

Labor Pain	n	Means	Positive Rating	Negative Rank	P-value
Before doing effleurage massage	30	5.30	0.00	15.00	0.000
After doing the effleurage massage	30	2.50			

Based on the table above, it is known that the average labor pain before massageffleurageobtained an average of 5.30 and after massageffleurageobtained an average of 2.50. A positive rank value of 0.00 means that there is no pain intensity after massageffleuragewhich was higher than before the massage intervention was giveneffleurage.Vice versa, a negative rank value of 15 means all pain intensity after massageffleuragelower than before the massage intervention was giveneffleurage.Test resultswilcoxon got pvalue0.000 <0.05 means there is a massage effecteffleurageon reducing labor pain in the 1st stage in the Work Area of the Bandar Negeri Suoh Health Center in 2023.

DISCUSSION

The average labor pain stage 1 before effleurage massage

The results of this study indicate that the average labor pain in the 1st stage before effleurage massage was performed was 5.30 with a standard deviation of 0.750, a minimum pain score of 4 and a maximum of 6.

Labor pain is a subjective experience of physical sensations associated with uterine contractions, cervical dilatation and effacement, and fetal descent during labour. Pain in the first stage of labor is due to dilatation of the cervix and lower uterine segments with further distension, stretching, and trauma to the muscle fibers and ligaments (Judha et al, 2017).

At the time of the research, it was found that the mother stated that she could not stand the pain that was felt, especially during the first stage. The mother felt pain in the abdomen, waist, back and radiating to the spine. This is in accordance with Maryuani's theory (2015), namely the cause of pain during labor in the first stage, the pain is visceral. Visceral pain is slow and rather painful due to uterine contractions and cervical opening. The pain begins as a slight stabbing, then reaches a peak, then completely disappears which is signaled by sympathetic afferents and is transmitted to the spinal cord in segment T10-L1 (thoracic 10-lumbar1) via the delta nerve fibers and originates from the lateral wall and uterine fundus.

This is in line with Handayani's research (2016) which said that the pain scale before effleurage massage was carried out in primigravida mothers in the first active phase was the majority with a moderate pain scale, namely 15 (53.6%). In addition, according to Karlinah and Hakameri's research (2022) it shows that the average pain level before an effleurage massage is carried out is 5.00.

According to the researcher's analysis, during the first stage of the active phase, the majority of respondents experienced moderate and mild pain. The intensity of pain in women giving birth can be influenced by the age factor, namely in this study there were 4 mothers who were 19 years old. Besides that, it can be influenced by parity factors where in this study there were 13 (43.3%) mothers with primiparous parity. Primiparous mothers have never given birth so they cannot control pain when contractions occur. Based on this, it is necessary to provide interventions to reduce pain during stage 1.

The average labor pain stage 1 after effleurage massage

The results of this study indicate that the average labor pain stage 1 after effleurage massage is 2.50 with a standard deviation of 1.167, a minimum pain score of 1 and a maximum of 5.

Effleurage is a light massage using the fingers, usually on the stomach, in rhythm with breathing during contractions. Effleurage can be done by the birthing mother herself or by the birth attendant during the contractions. This is used to distract the mother from pain during contractions (Herinawati, 2019).

In accordance with the theory put forward by Handayani (2011), one of the things that can reduce pain is due to giving effleurage massage to the abdomen which stimulates tactile fibers in the skin so that pain signals can be inhibited. Stimulation of the skin with this effleurage results in messages being sent via the A-δ fibers, fibers that transmit pain quickly, which causes the gates to close so that the cerebral cortex does not receive pain signals and the pain intensity changes/reduces, this is in accordance with what was stated.

This research is in line with research conducted by Lestari and Apriyani (2019) which

shows that after being given an intervention is moderate pain (average 4.95). The decrease in pain level after being given the intervention was 2.42.

According to the researcher's analysis, the research respondents seemed able to control themselves, were calmer, and looked more comfortable when doing effleurage massage. Besides that, after measuring the intensity of pain, it was found that most of the mothers had a mild pain scale. This is supported because the pain will decrease after the massage is done because the pain fibers carrying pain stimulation to the brain are smaller and the sensation travels slower than the broad fibers and the sensations run faster. Touch and pain are stimulated along with the sensation of touch traveling to the brain and closing the gate in the brain and there is a limitation of pain intensity in the brain. Massage is a distraction that can increase the formation of endorphins in the descending control system so that it can make the patient more comfortable because of muscle relaxation.

Effect of massage effleurage on reducing labor pain in the 1st stage

The results of this study indicate that the average labor pain before the effleurage massage is done is an average of 5.30 and after the effleurage massage is done the average is 2.50. The results of the Wilcoxon test obtained a p value of $0.000 < 0.05$, meaning that there was an effect of effleurage massage on reducing labor pain in the first stage of labor in the Work Area of the Bandar Negeri Suoh Health Center in 2023.

Massage or massage of the abdomen (effleurage) are forms of skin stimulation used during labor to effectively reduce pain. This is in accordance with the theory according to Paritiwi (2018), namely massage effleurage in labor is done using soft and light fingertips. Do the wiping lightly and without strong pressure, but try not to let the fingertips come off the surface of the skin. Stimulation of the skin with the effleurage technique produces impulses that are sent through large nerve fibers that are on the surface of the skin, these large nerve fibers will close the gate so that the brain does not receive pain messages because it has been blocked by skin stimulation with this technique, as a result the perception of pain will change apart from relieving pain, massage will stimulate the uterine muscles to contract.

Effleurage massage has a role in the components of social relations, namely by utilizing social gestures (body movements that are social). Providing effleurage massage means giving touch as a physical cue to increase the awareness of health

workers in understanding the conditions being faced by clients. Touch will provide calm so that it becomes the basis for creating a feeling of security. The client will feel that he is getting attention through the direct touch given by the health worker, thus fostering closeness and in-depth interaction between the mother and the client, thus the client feels satisfied, safe and comfortable. Effleurage massage bridges social relations through several components including positive eye contact, friendly facial expressions, rhythmic vocalizations, voice intonation, relaxing, and body movements (Qurniasih,

The results of this study are in line with the results of research by Herinawati (2019) which showed that there was a significant effect between effleurage massage on reducing pain in the first active phase at the Independent Midwife Practice Nuriman Rafida and the Independent Midwife Latifah Practice with P (value) $0.000 < 0.05$. In addition, according to Bingan's research (2020) which states that there is a significant effect between pain before massage and after massage, in other words if you do Effleurage Massage it can reduce pain. So that from the results of this analysis it can be concluded that there is an effect of the Effleurage Massage technique on the pain of the first stage. In addition, according to Rika and Aryanti (2014) which showed that there was a significant difference in labor pain before and after effleurage massage.

According to the researcher's analysis, massage effleurage has an effect on reducing the intensity of pain in mothers in labor in the active phase I, although from the results of the study massage effleurage can affect the reduction of the intensity of labor pain, but it was also found that respondents had only a slight effect on reducing or increasing pain intensity after massage, this is due to the perception or tolerance factor for pain, which is caused by the characteristics of the mother based on parity, where mothers with multiparous parity have had previous birth experience, so they are more effective in dealing with the pain they feel. Meanwhile, in this study, there were 17 (56.7%) mothers with multipara parity, 13 (43, 43) respondents with primipara parity. 3%) have not had childbirth experience so that the pain they feel can increase their anxiety and fear, which then causes the mother to stress and tense during contractions, this can cause the pain to only decrease slightly after an effleurage massage is done. Based on this, this method is very efficient and does not cause side effects and can reduce labor pain in labor in the first stage of the active phase when contractions occur.

CONCLUSION

The average labor pain in the 1st stage before effleurage massage was carried out in the Work Area of the Bandar Negeri Suoh Health Center in 2023 was 5.30. The average labor pain in the 1st stage after effleurage massage was carried out in the Work Area of the Bandar Negeri Suoh Health Center in 2023 was 2.50. There is an effect of effleurage massage on decreasing stage 1 labor pain in the Work Area of the Bandar Negeri Suoh Health Center in 2023 with a p value of 0.000.

SUGGESTION

Can apply care in the management of painful contractions in the form of effleurage massage.

REFERENCES

- Andarmoyo, S. (2013). *Konsep dan Proses Keperawatan Nyeri*. Yogyakarta: Ar-Ruzz.
- Bingan, E.C.S. (2020). Pengaruh Teknik Massase Effleurage Terhadap Tingkat Nyeri Pada Ibu Bersalin Kala I Fase Aktif. *Midwifery Care Journal*, Vol. 1 No.5, Oktober 2020
- Bobak. (2010). *Buku Ajar Keperawatan Maternitas*. Edisi 4. Jakarta: EGC.
- Bohari, N.H., dkk. (2022). Gambaran Pengetahuan Ibu Tentang Massage Effleurage Dalam Menurunkan Nyeri Persalinan Normal Di Puskesmas Lembanna Kecamatan Kajang Kabupaten Bulukumba. *Journal of Midwifery and Nursing Studies*, Vol. 4 No. 1 May 2022
- Dartiwen. (2023). Analisis Komparasi Tingkat Nyeri Persalinan Antara Primipara Dan Multipara. *Jurnal Ilmu Keperawatan dan Kebidanan*, Vol.14 No.1 (2023) 84-91
- Dewi, Iga Prima. (2013). Aromaterapi Lavender Sebagai Media Relaksasi. Universitas Udayana : Bagian Farmasi Fakultas Kedokteran
- Elly susilawati. (2018). Efektivitas Pemberian Teknik Massage Effleurage Dan Teknik Massage Conterpressure Terhadap Rasa Nyeri Persalinan Normal Pada Primigravida Di Langsa Tahun 2017. *Jurnal Kebidanan*, Vol. 8 No. 1 Oktober 2018
- Fitriana Y. (2018). *Asuhan Persalinan : konsep persalinan secara komprehensif dalam asuhan kebidanan*. Jogyakarta: Pustaka baru press;
- Gaidaka, Astria Blandina, (2012). Pengeruh Deep Back Massage Terhadap Persalinan Kala I Fase Aktif Ibu Inpartu Primigravida diBPSEndang Adji, Amd.Keb,Karya Tulis Ilmiah, Surabaya.
- Herinawati, (2019). Pengaruh *Effleurage* Massage terhadap NyeriPersalinan Kala I Fase Aktif di Praktik Mandiri Bidan Nuriman Rafida dan Praktik Mandiri Bidan Latifah Kota Jambi Tahun 2019. *urnal Ilmiah Universitas Batanghari Jambi*, ISSN 1411-8939.
- Ikawati, Nurul. (2018). Perbedaan Teknik Kompres Air Hangat Dan Teknik Massage Untuk Mengurangi Nyeri Persalinan Kala I Fase Aktif Di Rsud Kota Makassar. Prodi D4 Bidan Pendidik Universitas Mega Rezky Makassar.
- Indrayani. (2016). *Update Asuhan Persalinan dan Bayi Baru Lahir*. Jakarta: Trans Info Medika
- Judha, Mohamad. (2017). *Teori Pengukuran Nyeri & Nyeri Persalinan*. Solo : Rahma Surakarta.
- Lestari, S. & Apriyani, N. (2019). Pengaruh Massage Effleurage Terhadap Perubahantingkat Nyeri Pada Pasien Kala 1 Fase Aktif Persalinan. *Jurnal Kesehatan* Vol. 10 No. 1 Tahun 2019
- Loisza, A., Nurhayati, S., & Nuryeti. (2022). Perbedaan Intensitas Nyeri Ibu Bersalin Kala I Fase Aktif Sebelum dan Sesudah Dilakukan Teknik Masase Effleurage di PMB Kota Bandung. *Jurnal Nursing Update-* Vol.14 No.1 (2023)
- Maryunani, A. (2015). *Nyeri Dalam Persalinan*. Jakarta: Trans Info Media.
- Notoatmodjo,S. (2018). *Metodologi Penelitian Kesehatan*. Jakarta: PT Rineka Cipta.
- Nurasiah, dkk. (2014). *Asuhan Persalinan Bagi Bidan*. Bandung: PT Refika Aditama.
- Nurmalitasari. (2016). Pemberian Teknik Deep Back Massage Terhadap Penurunan Nyeri Pada Asuhan Keperawatan Ny. S Dengan Persalinan Kala I Fase Aktif Diruang Bersalin Puskesmas Sibella Surakarta, Karya Tulis Ilmiah, Sekolah Tinggi Ilmu Kesehatan Kusuma Husada, Surakarta.
- Qurniasih, Nila (2017). *Efektivitas Masase Effleurage Terhadap Penurunan Intensitas Nyeri Persalinan Kala I Fase Aktif Di Puskesmas Kota Yogyakarta*. Naskah Publikasi Program Studi Ilmu Kebidanan (S-2) Program Pasca Sarjana Universitas 'Aisyiyah Yogyakarta
- Rahman, Stang Abdul. dkk. (2017). Penurunan Nyeri Persalinan Dengan Kompres Hangat Dan Massage *Effleurage*. *Jurnal MKMI*, Vol. 13 No. 2
- Rika Herawati. (2014). Faktor – Faktor Yang Berhubungan Dengan Gizi Lebih Pada Balita Di Wilayah Kerja Puskesmas Kepenuhan Hulu. *Jurnal Maternity and Neonatal Volume* 1 No 5. Universitas Pasir Pengaraian.

- Rika, V. N. A., & Aryanti, L. (2014). Pengaruh Massage Effleurage Terhadap Nyeri Persalinan Pada Ibu Inpartu Kala I Fase Aktif Di Rumah Sakit Ibu Dan Anak Sinta Bandar Lampung. *Jurnal Kesehatan Holistik*, 8(4), 192–197.
- Rohani., Saswita, Reni., Marisah. (2011). *Asuhan kebidanan pada masa persalinan*. Jakarta: Salemba Medika.
- Rohmi Handayani. (2011). Pengaruh teknik Massase Effleruge terhadap pengurangan Intensitas nyeri persalinan kala I fase aktif pada primipara, Purwokerto.
- Rukmala & Sarwinanti. (2016). Pengaruh Teknik Relaksasi Nafas Dalam dan Aromaterapi Melati terhadap Tingkat Dismenore pada Mahasiswi Fisioterapi Semester II di Universitas 'Aisyiyah Yogyakarta.
- Septianingtyas, W.N., dkk. (2022). Pengaruh Massage Effleurage Terhadap Tingkat Nyeri Ibu Bersalin Kala I Fase Aktif Di Kamar Bersalin Rumah Sakit Pupuk Kalimantan Timur Tahun 2021. *Jurnal Antara Kebidanan*, Vol. 4 No. 2 April-Juni Tahun 2021
- Solehati, Tetti dan Cecep Eli Kosasih. (2015). *Konsep dan Aplikasi Relaksasi dalam Keperawatan Maternitas*. Bandung : PT. Refika Aditama.
- Sugiyono. (2018). *Metode Penelitian Kuantitatif*. Bandung: Alfabeta.
- Sujiyatini, S., & Djanah, N. (2016). Akupresur Pada Acupoint SP6 Dan LI4 terhadap Tingkat Nyeri dan Lama Persalinan Kala II Di Puskesmas Rawat Inap Kota Yogyakarta. *Jurnal Teknologi Kesehatan (Journal of Health Technology)*, 12(1), 36–40.
- Uliyah, M., danHidayat, A. A. (2015). *Keterampilan Dasar Praktik Klinik untuk Kebidanan*. Jakarta: Salemba Medika.
- Utami, F.S., & Putri, I.M. (2020). Penatalaksanaan Nyeri Persalinan Normal. *Midwifery Journal*, Vol. 5, No. 2, Juli 2020, hal 107-109
- Walyani, Elisabeth Siwi. (2016). *Asuhan Kebidanan Pada persalinan dan bayi baru lahir*. Yogyakarta: PT. Pustaka Baru.
- Wulandari P, Hiba NDP. (2015). Pengaruh massase *effleurage* terhadap pengurangan nyeri persalian kala 1 fase aktif. *Jurnal Keperawatan Maternitas* ;1(3): 59- 67
- Yuliasari, D., & Santriani, E. (2018). Hubungan Counterpressure Dengan Nyeri Persalinan Pada Ibu Bersalin Kala I Fase Aktif Ibu Primipara Di Bps Hj. Sulastris, Amd.Keb Pekalongan Lampung Timur Tahun 2013. *Jurnal Kebidanan Malahayati*, 1(1). doi:<https://doi.org/10.33024/jkm.v1i1.536>
- Yuliatun, L. (2012). *Penanganan Nyeri Persalinan Dengan Metode Non farmakologi*. Malang: Bayumedia Publishing.
- Zakiah, Ana. (2015). *Nyeri: Konsep dan Penatalaksanaan dalam Praktik Keperawatan Berbasis Bukti*. Jakarta: Salemba Medika.

THE EFFECT OF KNOWLEDGE LEVEL EDUCATION ON THE IMPLEMENTATION OF BALANCED NUTRITION DURING PREGNANCY BASED ON LOCAL FOOD AS STUNTING PREVENTION

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ABSTRAK : PENGARUH TINGKAT PENGETAHUAN EDUKASI PENERAPAN GIZI SEIMBANG MASA KEHAMILAN BERBASIS PANGAN LOKAL SEBAGAI PENCEGAHAN STUNTING PADA IBU HAMIL

Latar Belakang : Stunting merupakan kondisi kekurangan gizi kronis sejak masa kehamilan hingga anak berusia dua tahun. Kondisi stunting dapat menyumbang angka kesakitan dan kematian pada bayi dan anak dan juga dapat menghambat pertumbuhan dan perkembangan.

Tujuan : tujuan kegiatan yaitu memberikan edukasi gizi berupa pendampingan ibu hamil untuk pencegahan stunting

Metode : Desain penelitian menggunakan metode survei analitik penelitian dilaksanakan di wilayah kerja Puskesmas Kesumadadi. Rancangan penelitian yang dilakukan yaitu menggunakan pre post eksperimental. Populasi pada penelitian ini yaitu ibu hamil trimester 1 sampai dengan trimester III. Analisis data ini menggunakan uji paired t test yang akan diolah menggunakan SPSS.

Hasil : kegiatan penelitian menunjukkan bahwa terjadi peningkatan pengetahuan ibu hamil dan dengan hasil analisis $0,005 < 0,05$ yang artinya ada pengaruh antara edukasi ibu hamil dengan peningkatan pengetahuan setelah diberikan edukasi gizi dan pendampingan penerapan gizi seimbang.

Kesimpulan

Sebelum dilakukan edukasi frekuensi pengetahuan kurang lebih banyak dibandingkan dengan frekuensi pengetahuan baik. Setelah dilakukan edukasi pengetahuan baik frekuensi lebih tinggi dibanding dengan frekuensi pengetahuan kurang. Adanya pengaruh antara edukasi ibu hamil dengan peningkatan pengetahuan setelah diberikan edukasi gizi dan pendampingan penerapan gizi seimbang.

Saran : tidak makan makanan frozen dan keluarga selalu mengingatkan untuk makan makanan gizi seimbang

Kata Kunci: Edukasi Gizi, Kehamilan, Pengetahuan, Stunting.

ABSTRACT

Background: Stunting is a condition of chronic malnutrition from pregnancy until the child is two years old. Stunting conditions can contribute to morbidity and mortality in infants and children and can also hinder growth and development.

Objective: The aim of the activity is to provide nutritional education in the form of assisting pregnant women to prevent stunting

Method: The research design used an analytical survey method. The research was carried out in the working area of the Kesumadadi Community Health Center. The research design used was pre-post experimental. The population in this study was pregnant women from the 1st trimester to the 3rd trimester. This data analysis uses a paired t test which will be processed using SPSS.

Results: research activities showed that there was an increase in the knowledge of pregnant women and the analysis results were $0.005 < 0.05$, which means that there was an influence between the education of pregnant women and an increase in knowledge after being given nutrition education and assistance in implementing balanced nutrition.

Conclusion : Before education was carried out, the frequency of knowledge was more or less greater than the frequency of good knowledge. After education, good knowledge is higher than the frequency of poor knowledge. There is an influence between pregnant women's education and increased knowledge after being given nutrition education and assistance in implementing balanced nutrition.

Suggestion: don't eat frozen food and always remind your family to eat balanced nutritional food

Keywords: Nutrition Education, Pregnancy, Knowledge, Stunting.

INTRODUCTION

Stunting is a chronic nutritional problem caused by a mismatch between nutritional intake and nutritional needs. The incidence of stunting begins from the time of conception or what is commonly known as the first thousand days of life. If balanced nutrition is not met during this period, the impact of stunting will only be known when the child is 24 months old. An area experiences nutritional problems if the prevalence of stunting is above 20%. Indonesia is among the highest in stunting cases with a prevalence of 37.2% compared to other neighboring countries.

Based on the Kesumadadi Community Health Center report, it is known that in 2023 there will be 20 (12%) stunted toddlers out of 1267 toddlers and in 2024 there will be 12 (13%) stunted toddlers out of 1275 toddlers. This data shows a picture of an increase in the number of stunted toddlers at the Kesumadadi Community Health Center. So far, cadres have collaborated with the TPG Naioni Kupang Community Health Center through several activities at the posyandu. So far, all these activities have not shown satisfactory results. The latest results based on the Setia community service report (2021) show that out of 12 newborns, 7 babies (40%) were born short.

The impact of stunting is an increase in morbidity and mortality rates in children, growth in body posture or height that is not optimal compared to the child's age, disruption of motor development, an increase in the incidence of degenerative diseases, less than optimal learning performance so that children's cognitive and productivity are affected and that even further is the increase in health costs (Rahmawati et al., 2020; Rahmadhita, 2020).

An indirect but risky factor that can potentially cause nutritional problems is knowledge (Salamung, N., 2021). Pregnant women must understand the concept of maternal nutrition during pregnancy, because the mother's nutritional status determines the health and nutritional status of the child or fetus in the womb. Olsa et al's (2017) research shows that nutritional knowledge during pregnancy is related to the selection and fulfillment of balanced nutritious food at the household level. Mothers with a good level of understanding about nutrition, knowing the function and benefits of food for growth and development tend to have children with good nutritional status as well. Knowledge based on understanding will create good behavior (Susilowati & Himawati, 2017). Knowledge of nutrition and the impact of maternal malnutrition during pregnancy is very important for pregnant women to know. This is because we can prevent stunting by providing proper

and correct nutrition so that it has an impact on the growth and development of the fetus (Sukmawati et al., 2021).

A preliminary study carried out in the working area of the Kesumadadi Community Health Center, showed the results that after measuring the nutritional knowledge of pregnant women using a questionnaire on 12 pregnant women in the Kesumadadi Community Health Center working area, there were around 60 % of pregnant women with poor knowledge. One of the reasons why children experience stunting is the mother's level of understanding of nutrition during pregnancy, so it is important to carry out community service activities to increase the mother's knowledge of nutrition during pregnancy so that she is able to fulfill and make additional food during pregnancy based on local food to prevent stunting (Trisyani, K., Fara, Y. D., Mayasari, A. T., & Abdullah (2020).

RESEARCH METHODS

This research was conducted for 1 day. This type of research is an analytical survey with a pre post experimental design with paired t test data analysis. This research was conducted at the Kesumadadi Community Health Center with a population of 25 and the sample are 12 because has according to the inclusion criteria : pregnant women who wish to become respondent, there are complication of pregnancy and whose house is in the Kesumadadi Community Health Center area. The sample used in this research was total sampling, mothers who had their pregnancy checked at the Kesumadadi Health Center and mothers whose homes were close to the Kesumadadi Health Center. The exclusion criteria in this study were mothers who could not read and mothers who had pregnancy complications.

RESEARCH RESULT

The nutrition education carried out in this service activity takes the form of counseling using leaflet media with the material presented, namely nutrition during pregnancy, signs and symptoms and prevention of stunting, then continued with a discussion and question and answer session (figure 1). In the discussion session, participants were very active in asking questions regarding the types of food that should be consumed, foods that should be consumed and reduced, food arrangements when children start being given complementary foods for breast milk, and efforts to prevent stunting and how to consume food in the early trimester. After being given nutritional education in the form of material about stunting, it was followed by a demonstration on

making additional food for pregnant women based on local food (figure 2). When explaining frozen food

recipes, participants were very enthusiastic and liked the taste of the frozen food they made.

Tabel 1
The Effect Of Knowledge Level Education On The Implementation Of Balanced Nutrition During Pregnancy Based On Local Food As Stunting Prevention Conclusion

Pengetahuan	F	%	F	%	P value
Baik	4	33.3	10	83,3	0,005
Cukup	0	0	2	16,7	
Kurang	8	66,7	0	0	
Jumlah	12	100	12	100	

Table 1 shows that of 12 pregnant women, only 33.3% of pregnant women had good knowledge before being given education. Increased to 83.3% after being given education. 66.7% before education, pregnant women had little knowledge about nutrition during pregnancy. This lack of knowledge regarding balanced nutrition in pregnant women is illustrated by the lack of weight gain of the pregnant mother during pregnancy based on interview data on weight gain or discrepancies in weight gain in the current trimester and the research results of Misrina and Salmiati (2021) state that a mother with knowledge and poor nutritional attitudes can affect the nutritional status of the mother which is reflected in weight gain that is not appropriate for gestational age, this is due to a good understanding of nutrition related to choosing a balanced menu. Other research proves that there is a relationship between a mother's good understanding of nutrition and one of the determinant factors for the growth and development of babies and toddlers. Mothers with good knowledge and understanding of nutrition are able to choose good food ingredients and prepare a balanced menu according to nutritional needs at the household level and are able to implement a healthy lifestyle. (Lukman et al., 2017; Antari, G. Y., & Supianti, R. 2022). Other research explains that knowledge and understanding of good nutrition is reflected by consuming blood supplement tablets as recommended so that it affects the nutritional status of pregnant women (Susanti, D. ., & Dewi, R. 2022).

The results of table 1 are 0.005, which means there is an influence between the implementation of balanced nutrition education in pregnant women. Education is one of the health education activities. Health education is defined as a learning process carried out both targeting individuals, families, groups and communities with the aim of changing unhealthy behavior to healthier patterns. There are many methods used in the health education process, including strategies for sharing knowledge, maintaining commitment to behavior

change and also health education focusing on behavior change as the basis for changes in health status (Listyarini et al., 2020).

After being interviewed and filling out the post test questionnaire, 83.3% of pregnant women already knew about balanced nutrition during pregnancy in preventing stunting by answering and providing arguments and statements that supported pregnant women's own understanding regarding the material presented. Pregnant women know that there is no significant weight gain during pregnancy due to poor food supply patterns and eating habits during pregnancy, and are also aware of the effects of this ignorance on pregnant women who have had children before by looking at the nutritional status of the child concerned. After carrying out a demonstration on making frozen food based on local food for pregnant women, pregnant women became interested and practiced at home. Nutrition education for pregnant women has a significant impact on increasing mothers' knowledge about nutrition during pregnancy and preventing stunting. Previous research showed that there was an increase in maternal knowledge after being given intervention in the form of nutrition education (Anggraeni & Murni, 2021).

Nutrition education given to pregnant women is reported to be able to change mothers' behavior in selecting and procuring balanced food at the household level, which if balanced nutrition is met is able to prevent short births and stunting in the future (Yunitasari et al., 2021). Other research is Ekayanthi & Suryani (2019) showed the results that providing education to pregnant women had a significant influence on increasing mothers' knowledge in preventing stunting. The mother's attitudes and behavior during pregnancy are supported by the mother's knowledge about her pregnancy (Ekayanthi & Suryani, 2019). The most successful nutritional health intervention for pregnant women is knowledge (Musdalifah et al., 2020)

CONCLUSION

Before education was carried out, the frequency of knowledge was more or less greater than the frequency of good knowledge. After education, good knowledge is higher than the frequency of poor knowledge. There is an influence between pregnant women's education and increased knowledge after being given nutrition education and assistance in implementing balanced nutrition.

SUGGESTION

There has been an increase in nutritional knowledge of pregnant women to prevent stunting. Advice given to cadres and TPGs in local work areas is that assistance in the form of nutrition education should be carried out as often as possible so that targets know and are often exposed to health information. There is an influence of 0.005, which means there is an influence between the application of balanced nutrition education to pregnant women.

REFERENCES

- Anggraeni, N. P. D. A., & Murni, N. N. A. (2021). Sosialisasi Stunting Dan Upaya Pencegahannya Melalui Edukasi Tentang Nutrisi pada Ibu Hamil. *GEMAKES: Jurnal Pengabdian Kepada Masyarakat*, 1(1), 1–6. <https://doi.org/10.36082/gemakes.v1i1.295>
- Antari, G. Y., & Supianti, R. (2022). Efforts to Increase Pregnant Women's Understanding of Obedience in Consuming Fe Tablets: Upaya Peningkatan Pemahaman Ibu Hamil Tentang Kepatuhan Ibu Hamil Dalam Mengonsumsi Tablet Fe. *Ahmar Metakarya: Jurnal Pengabdian Masyarakat*, 1(2), 56–60. <https://doi.org/10.53770/amjpm.v1i2.47>
- Anwar. (2022). "Systematic Review Faktor Risiko, Penyebab Dan Dampak Stunting Pada Anak." *Jurnal Ilmu Kesehatan* 11 (1): 88. <https://doi.org/10.32831/jik.v11i1.445>
- Apriliani. 2021. "Open Access Open Access." *Citizen-Based Marine Debris Collection Training: Study Case in Pangandaran* 2 (1): 56–61
- Amalia, Fifiandyas. (2018). Pengaruh Edukasi Gizi Terhadap Pengetahuan Dan Praktik Calon Ibu Dalam Pencegahan KEK Ibu Hamil. *Ilmu Kesehatan* 6(5): 370–77.
- Ari. (2023). "Meningkatkan Kapasitas Kader Posyandu Dalam Upaya Pencegahan Dan Penanganan Stunting." *Abdimas Polsaka*, 82–88. <https://doi.org/10.35816/abdimaspolsaka.v2i1.43>
- Bachtiar. (2023). "Pemberdayaan Kader Kesehatan Dalam Pencegahan Dan Penatalaksanaan Stunting Melalui Edukasi Dan Optimalisasi Pemanfaatan Pangan Lokal Di Wilayah Puskesmas Tamansari." *Pengabdian Masyarakat* 2 (8): 1008–15.
- Eli. 2021. "Edukasi Gizi Seimbang Bagi Kader Posyandu Pada Masa Pandemi Covid-19 Sebagai Pencegahan Balita Stunting Di Kabupaten Bekasi." *Jurnal Antara Abdimas Keperawatan* 4 (1): 1–10. <https://doi.org/10.37063/abdimaskep.v4i1.552>
- Ekayanthi, N. W. D., & Suryani, P. (2019). Edukasi Gizi pada Ibu Hamil Mencegah Stunting pada Kelas Ibu Hamil. *Jurnal Kesehatan*, 10(3), 312–319. <https://doi.org/10.26630/jk.v10i3.1389>
- Febriantika, Nova. (2017). Pengaruh Promosi Kesehatan Terhadap Pengetahuan Ibu Mengenai Gizi Ibu Hamil Di Puskesmas Pasir Kecamatan Ciampea Kabupaten Bogor Tahun 2016. *Ilmu Kesehatan* 10(3), 312–319.
- Hanachi, Parichehr, Mansoreh Norrozi, and Rayhaneh Miri Moosavi. (2014). —The Correlation of Prenatal Zinc Concentration and Deficiency with Anthropometric Factors. *Ilmu Kesehatan* 8(1): 21–26. <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=4064761&tool=pmcentrez&rendertype=abstract>
- Hamalinda. (2020). "Analysis of Stunting Determinant Event in Taraweang Village Labakkang District Pangkep." *Jurnal Dunia Gizi* 3 (1): 09. <https://doi.org/10.33085/jdg.v3i1.4646>
- Hastrin. (2024). "Hastrin Hositanisita 1*, Sintha Dewi Purnamasari 2, Arantika Meidya Pratiwi 2" *Ilmu Kesehatan* 11 (2): 54–59
- Listyarini, A. D., Fatmawati, Y., & Savitri, I. (2020). Edukasi Gizi Ibu Hamil Dengan Media Booklet Sebagai Upaya Tindakan Pencegahan Stunting Pada Balita Di Wilayah Kerja Puskesmas Undaan Kabupaten Kudus. *Jurnal Pengabdian Kesehatan*, 3(1), 73–83. <https://doi.org/10.31596/jpk.v3i1.70>
- Lukman, S., Arbie, F. Y., & Humulungo, Y. (2017). Hubungan Pengetahuan Gizi Ibu Dengan Kejadian Stunting Pada Anak Balita Di Desa Buhu Kecamatan Talaga Jaya Kabupaten Gorontalo. *Health and Nutrition Journal*, 3(1), 42–53. <https://doi.org/10.52365/jhn.v3i1.119>
- Misrina, & Salmiati. (2021). Analisis Penyuluhan Menggunakan Leaflet Terhadap

- Pengetahuan Ibu Tentang Stunting Pada Balita Di Desa Cot Puuk Kecamatan Gandapura Kabupaten Bireuen. *Journal of Healthcare Technology and Medicine*, 7(2), 683–692.
<https://doi.org/10.33143/jhtm.v7i2.1581>
- Musdalifah, Manapa, E. S., Ahmad, M., Nontji, W., Soraya, R. D., & Hidayanti, H. (2020). Pengembangan Modul Deteksi Risiko Stunting Terhadap Pengetahuan Ibu Hamil. *Oksitosin : Jurnal Ilmiah Kebidanan*, 7(2), 62–75.
<https://doi.org/10.35316/oksitosin.v7i2.660>
- Olsa, E. D., Sulastri, D., & Anas, E. (2017). Hubungan Sikap dan Pengetahuan Ibu Terhadap Kejadian Stunting pada Anak Baru Masuk Sekolah Dasar di Kecamatan Nanggalo. *Jurnal Kesehatan Andalas*, 6(3), 523–529.
<https://doi.org/10.25077/jka.v6i3.733>
- Pratiwi, I. G., Restanty, D. A., Mataram, P. K., & Malang, P. K. (2018). Penerapan Aplikasi Berbasis Android “Status Gizi Balita Terhadap Pengetahuan Ibu Dalam Pemantauan Status Gizi Anak Usia 12-24 Bulan.” *JURNAL KEBIDANAN AKADEMI KEBIDANAN JEMBER*, 2(1), 8–14.
- Rahmadhita, K. (2020). Permasalahan Stunting dan Pencegahannya. *Jurnal Ilmiah Kesehatan Sandi Husada*, 11(1), 225–229.
<https://doi.org/10.35816/jskh.v11i1.253>
- Ribeiro Neves, Paulo Augusto, Andrea Ramalho, Patricia De Carvalho Padilha, and Claudia Saunders. (2014). The Role of Prenatal Nutrition Assistance on the Prevalence of Night Blindness in Pregnant Adults. *Il Nutricion hospitalaria* 29(5): 1132–40
- Rahmawati, R., Bagata, D. T. R., Raodah, R., Almah, U., Azis, M. I., Zadi, B. S., Noormansyah, D. A., Khodijah, S., Al Jauhariy, M. R., Risyki, M. F., & Putri, M. S. K. (2020). Sosialisasi Pencegahan Stunting Untuk Meningkatkan Sumber Daya Manusia Unggul. *Jurnal Pembelajaran Pemberdayaan Masyarakat (JP2M)*, 1(2), 79–84.
<https://doi.org/10.33474/jp2m.v1i2.6512>
- Salamung, N. (2021). Pengetahuan Ibu Tentang Pencegahan Stunting Pada Balita Di Kelurahan Tatura Utara Kota Palu. *Pustaka Katulistiwa*, 2(1), 44–49. <https://journal.stik-ij.ac.id/index.php/Keperawatan/article/view/77>
- Sukmawati, Hermayanti, Y., Nurhakim, F., DA, I. A., & Mediani, H. S. (2021). Edukasi Pada Ibu Hamil, Keluarga Dan Kader Posyandu Tentang Pencegahan Stunting. *Jurnal Aplikasilpteks Untuk Masyarakat*, 10(4), 330–335.
<https://doi.org/10.24198/dharmakarya.v10i4.33400>
- Susanti, D., & Dewi, R. (2022). Education on Prevention of Stunting Through Exclusive Breastfeeding in the Community: Edukasi Pencegahan Stunting Melalui Pemberian ASI Eksklusif Pada Masyarakat. *Ahmar Metakarya: Jurnal Pengabdian Masyarakat*, 1(2), 107–114.
<https://doi.org/10.53770/amjpm.v1i2.85>
- Susilowati, E., & Himawati, A. (2017). Hubungan Tingkat Pengetahuan Ibu Tentang Gizi Balita Dengan Status Gizi Balita Di Wilayah Kerja Puskesmas Gajah 1 Demak. *Jurnal Kebidanan*, 6(13), 21–25.
<https://doi.org/10.31983/jkb.v6i13.2866>
- Sutriyawan. (2020). “Hubungan Status Imunisasi Dan Riwayat Penyakit Infeksi Dengan Kejadian Stunting Pada Balita: Studi Retrospektif.” *Journal Of Midwifery* 8 (2): 1–9.
<https://doi.org/10.37676/jm.v8i2.1197>
- Trisyani, K., Fara, Y. D., Mayasari, A. T., & Abdullah. (2020). Hubungan Faktor Ibu Dengan Kejadian Stunting. *Jurnal Maternitas Aisyah*, 1(3), 189–197.
<http://journal.aisyahuniversity.ac.id/index.php/Jaman/article/view/126/105>
- Yulnafia. (2022). “Hubungan Riwayat Penyakit Infeksi Dengan Kejadian Stunting Pada Balita Usia 24-36 Bulan Di Wilayah Kerja Puskesmas Tambang Kabupaten Kampar.” *Jambi Medical Journal* 10 (1): 154–63.
- Yumna. (2023). Pelatihan Kader Kesehatan Tentang Gizi Seimbang Dan Pengukuran Antropometri Balita : Suatu Studi Kasus. *Jurnal Ilmiah Mahasiswa Fakultas Keperawatan VII*.
<https://jim.usk.ac.id/FKep/article/view/24161/13373>
- Yunitasari, E., Pradanie, R., Arifin, H., Fajrianti, D., & Lee, B.-O. (2021). Determinants of Stunting Prevention among Mothers with Children Aged 6–24 Months. *Open Access Macedonian Journal of Medical Sciences*, 9(B), 378–384.
<https://doi.org/10.3889/oamjms.2021.6106>

THE INFLUENCE OF MIDWIFE'S INFORMATION ON CHOICE OF CONTRACEPTION DEVICES

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ABSTRAK : PENGARUH INFORMASI BIDAN TERHADAP PEMILIHAN ALAT KONTRASEPSI

Latar Belakang: Kontrasepsi merupakan pengaturan kehamilan dengan menggunakan alat atau metode dengan tujuan mencegah kehamilan. Tidak banyak pula WUS yang memilih untuk tidak menggunakan alat kontrasepsi apapun, dikarenakan pengetahuan WUS terhadap efek samping alat kontrasepsi. Sedangkan WUS yang menggunakan alat kontrasepsi banyak sekali memiliki ragam pilihan terhadap alat kontrasepsi yang akan atau sedang digunakannya, banyak sekali faktor yang mempengaruhi WUS dalam memilih alat kontrasepsi salah satunya adalah informasi bidan.

Tujuan: Penelitian ini bertujuan untuk mengetahui pengaruh informasi bidan terhadap pemilihan alat kontrasepsi

Metode : Metode penelitian ini menggunakan metode kuantitatif analitik dan metode pengambilan sampel dengan simple random sampling. Penelitian ini dilakukan di klinik Azki Medika Kec. Rengat dengan jumlah sampel 95 orang. Penelitian dilakukan pada bulan Januari-Maret 2024

Hasil: Hasil penelitian yang didapat adalah untuk informasi bidan mayoritas responden mengatakan sudah Lengkap sebanyak 58.8 %. Sedangkan untuk pemilihan alat kontrasepsi, mayoritas memilih karena informasi bidan sebanyak 61.1 %. Hasil analisis berdasarkan Uji statistik *Chy Square* nilai $p < 0,05$.

Kesimpulan: Berdasarkan hasil uji statistik, ada pengaruh yang signifikan antara informasi bidan terhadap pemilihan alat kontrasepsi.

Saran: Diharapkan bagi tenaga kesehatan khususnya bidan dapat meningkatkan pemberian informasi terkait Keluarga Berencana terhadap calon akseptor KB.

Kata Kunci : Informasi; Bidan, Informasi, Kontrasepsi

ABSTRACT

Background: Contraception is the management of pregnancy using devices or methods with the aim of preventing pregnancy. There are also not many WUS who choose not to use any contraceptives, due to WUS' knowledge of the side effects of contraceptives. Meanwhile, WUS who use contraceptives have a wide variety of choices regarding the contraceptives they will or are currently using, there are many factors that influence WUS in choosing contraceptives, one of which is midwife information.

Objective: This study aims to determine the influence of midwife information on the choice of contraceptives

Method: This research method uses quantitative analytical methods and sampling methods using simple random sampling. This research was conducted at the Azki Medika clinic, Kec. Rengat with a sample size of 95 people. The research was conducted in January-March 2024

Results: The research results obtained were that for midwife information, the majority of respondents said it was complete, 58.8%. Meanwhile, for the choice of contraceptives, the majority chose because of the midwife's information, 61.1%. The analysis results are based on the *Chy Square* statistical test with a p value < 0.05 .

Conclusion: Based on the results of statistical tests, there is a significant influence between midwife information on the choice of contraceptives.

Suggestion: It is hoped that health workers, especially midwives, can increase the provision of information related to family planning to prospective family planning acceptors.

Keywords: Midwife; Information; Contraception

INTRODUCTION

Population growth that cannot be controlled has many impacts on the population itself, including poor health levels resulting from lack of food and nutrition, low public education, and increasing unemployment rates. To suppress or reduce the rate of population growth, the government implemented a program called the Family Planning (KB) movement. The family planning program has a strategic, comprehensive and fundamental meaning in creating small, happy and prosperous families. (Dedi Kurniawan and Fenti Dewi Pertiwi, 2021)

The Family Planning Program is an activity that aims to adjust the child's conception age, manage pregnancy gaps, and help freely reproduce quality family knowledge. Another source says that family planning is an effort to space out or plan the number of children and the spacing of pregnancies by using contraception. (Badrun Munandar, 2017). Choosing the right contraceptive device is an important factor in family planning program efforts. (Rendys Septalia and Nunik Puspitasari, 2016). Family planning services and information are a key intervention in efforts to improve the health of women and children and are a human right. (Inggit Pratiwi and Ulfa Fadilla R, 2020)

According to WHO (World Health Organization) in 2020, contraception is the act of helping individuals or couples achieve certain goals, avoid unplanned childbirth, and have children according to their wishes. (Yati Nur Indah Sari et al., 2019). Many factors influence family planning acceptors in choosing contraceptives (Dewi Astuti and Holiday Ilyas, 2015). Riskesdas 2018 shows data that 66% use family planning in Indonesia. There has been an increase in the prevalence of contraceptive use in Indonesia but it is still far from the government's target. (Eva Safitriani et al., 2022)

The National Family Planning Program is an effort to meet the community's need for quality family planning and reproductive health services, reducing maternal mortality and infant mortality (MMR and IMR) as well as overcoming reproductive health problems in order to build quality children's lives. According to BPS 2022 data, 55.36% of couples of childbearing age (PUS) are using contraception. It is estimated that in 2022 the prevalence of contraceptive use by married women is projected to be 62.2%. The percentage will continue to rise until it reaches 64.4% in 2030. Meanwhile, modern contraception such as sterilization, pills, spiral/IUD, birth control injections, birth control implants, condoms, and lactational amenorrhea methods (MAL) are more often chosen

by married women in Indonesia. The prevalence of modern contraceptive use is projected to be 59.7% in 2022. The figure will continue to grow until it reaches 61.9% in 2030. (Elsa, 2023)

The contraceptive method most often chosen by couples of childbearing age (PUS) is short-term contraception such as pills and injections compared to long-term contraceptive methods (MKJP). (Mirawati et al., 2024). Contraception including MKJP is IUD/IUD, Implant, MOP and MOW. Based on the choice of type of contraceptive device, the majority of family planning participants actively used contraceptive injections (62.42%), pills (13.99%), implants (11.4%), IUD (7.71%), MOW (0.52%), and MOP (0.03%). (Erlina F Santika, 2023) Education and information regarding MKJP is of course the government's obligation so that it can be conveyed and accepted by the public so as to increase interest in using MKJP. (Kemenkes RI, 2021)

One of the permanent or stable contraceptives and a long-term method that is rarely used is implants. (Erma Sugiana et al., 2021). Based on research by Eminur (2016), exposure to sources of information about MKJP is related to interest in MKJP. The more exposure to information received is identified with the greater number of individuals receiving health promotion. (Eminur Itri Sari, 2016). When compared with other contraceptive devices, implants are contraceptive devices that are equally as long-term effective as IUDs or spirals. (Eva Safitriani et al., 2022). The implant is a long-term contraceptive method (MKJP) in the form of an implant made from a type of plastic rubber containing hormones, installed in the upper arm. Implants can be used for a long term of 3-5 years and are reversible. The advantage of the contraceptive implant is that it is highly effective at 99% in preventing pregnancy for 3 years (implant failure rate, 1 per 100 women per year in the first 3 years), this is the same as the effectiveness of the IUD, but the implant has a smaller percentage of failure, namely 0.05%, while the IUD has a failure percentage of 0.8%. (Husna Farianti Amran, 2019)

The quality of implementing good family planning services has not yet fully reached all regions of the archipelago. Because there are several things that influence couples of childbearing age in choosing contraceptives, such as the source of information received, education, socio-economics, culture, religion, women's status and husband's support. This is because each contraceptive method or device chosen has different effectiveness (Anita Lontaan et al., 2014). Sources of information related to increasing acceptor knowledge about contraceptives.

Knowledge will later determine a person's health behavior (Suci Oktavianah et al., 2023). The information provided by midwives is a message or collection of messages consisting of ordered sequences of symbols, or meanings that can be interpreted from the message or collection of messages. Information can be recorded or transmitted. These can be recorded as signs, or as wave-based signals. So the information that is usually carried out by the midwife with the client/PUS is also called counseling. (Titis Martyas, 2017)

Counseling is ideally provided to achieve specific goals arising from an individual's needs in various areas of personal and social, learning and professional practice. The attitude of staff in providing good counseling is to treat patients well, interact with staff and patients, health workers will provide appropriate and correct information to patients. In other words, don't provide too much unnecessary information (Titis Martyas, 2017). By conducting counseling, it means that officers help clients in choosing and deciding on the type of contraception to use according to their choice, besides that it can make clients feel more satisfied. (Nurhikmah et al., 2022)

One of the main factors why women of childbearing age do not use family planning in populations with low contraceptive prevalence is lack of knowledge or information about contraception. Knowledge about contraception influences the choice and use of contraception, but knowledge about contraception will have a more significant influence on contraceptive use if prospective acceptors receive adequate information about specific methods of contraception. Complete information about contraceptive methods from service providers can increase the acceptor's trust in the service provider (Safitri and Rani, n.d.). Ramariani and Arista (2022) explained that the low level of respondent participation in contraceptive use was influenced by public misinformation or misreporting about contraception and side effects. When people receive inaccurate information, they will be reluctant to try, let alone interested in using contraception (Ramariani and Arista, 2022). Research conducted in 2022 stated that as many as 51.9% of women had moderate motivation to use contraception. (Sinta Kiki Amelia and Yektingtyastuti, 2024)

RESEARCH METHODS

The research method uses a quantitative research strategy (using a questionnaire with items that are assessed numerically). This research will

look at the factors that influence the choice of contraceptives. The factors that influence the choice of contraceptives are: one of them is "The influence of midwife information". The selection of quantitative methods is used to obtain existing facts and seek overall completeness regarding the influence between the variables studied. This research was conducted at the Azki Medika Clinic, Rengat District, Indragiri Hulu Regency in January-March 2024. The sample in this study was 95 women of childbearing age who visited the AZKI Medika Clinic. Samples were taken using consecutive sampling as many as 95 respondents. Instruments in research are tools that will be used in data collection. The instruments used were questionnaires and observation sheets. The type of data in this research is quantitative data, namely primary data to find out the reasons for choosing the contraceptive method used, where this variable is divided into 2 categories, namely. For the midwife information variable, it is categorized: complete information: \geq mean and incomplete information $<$ mean. The contraceptive choice variable is categorized into: choosing because the midwife's information: \geq mean, choosing because other information $<$ mean. Meanwhile, for data analysis using the Chy Square statistical test. If the p.value < 0.05 then the test states there is a significant correlation between the independent variable and the dependent variable, but if the p.value ≥ 0.05 then the test states there is no significant correlation between the independent variable and the dependent variable.

RESEARCH RESULTS

The variables in this research consist of independent variables and dependent variables. The independent variable in this study is midwife information while the dependent variable is the reason for choosing a contraceptive device. The results of data processing in this research were analyzed using Chy Square. Data processing and analysis used the Statistical Package for Social Science (SPSS) software version 26.0. Based on the data obtained in the 2 groups, the following results were obtained:

Table 1
Frequency distribution of completeness of information provided by midwives

Kelengkapan Informasi	Jumlah	Persentase
Informasi Lengkap	68	71.6
Informasi	27	28.4

Based on table 2, it can be seen that the majority of midwife information provided was in the complete category, 68 people (71.6%).

From table 2 above, it can be seen that of the 95 respondents, the majority chose contraceptives based on information from the midwife, namely 69 people (72.6%).

Table 2
Frequency distribution of reasons for selecting contraceptives

Alasan Pemilihan Kontrasepsi	Jumlah	Persentase
Karena Bidan	69	72.6
Informasi Lain	26	27.4

Table 3
Results of statistical tests on the relationship between midwife information and the choice of contraceptives

Alasan Pemilihan Alat Kontrasepsi	Informasi Bidan		Total	P Value
	Lengkap	Tidak Lengkap		
Karena Bidan	56	13	69	0.001
Karena Informasi Lain	12	14	26	

Based on table 3, it can be seen that 56 respondents said they received complete information and chose contraceptives because they came from midwives, and 12 people said they chose contraceptives from other sources of information. Based on statistical tests, there is an influence between midwife information on the choice of contraceptives. This is proven by the p value (0.001). based on the Chy Square statistical test, the p value is <0.05, which means there is a relationship between the independent variable and the dependent variable.

DISCUSSIONS

In table 1 above, of the 95 women of childbearing age who were respondents, the majority of respondents said they received information from midwives regarding contraception in the complete category, 68 people (71.6%). We know that the information a person receives greatly influences that person's attitude in doing something.

Based on research conducted by Farida Aryani (2013), around 71.1% of midwives play a role in the initial counseling given to DMPA injection acceptors (Farida Aryani, 2013).

The success of counseling is closely related to the counselor's attitude/behavior which can be influenced by providing information, in one study there was a significant influence between providing counseling as a source of information on the level of knowledge and attitudes of acceptors in choosing contraceptives. (Novita Eka Kusuma Wardani et al., 2019) . Providing information by midwives to clients is also part of counseling. In research, Siti (2022) stated that as health workers they can improve the counseling skills of acceptors so that they can realize the success of health service programs,

especially in the field of family planning. This will ultimately increase the acceptor's knowledge so that the acceptor can choose the contraceptive device well. (Siti Amallia and Yessy Octa Fristika, 2022)

In table 2, the results obtained are that the majority of respondents chose contraception based on the information obtained from midwives, namely 69 people (72.6%). This line is in accordance with research conducted by Ririen Hardani (2022) who stated that the majority of respondents said that the source of information in choosing which contraceptive to use came from information from midwives, 108 respondents (31%) and the 2018 research also stated that the data obtained shows that the source of information most used by family planning acceptors as a consideration in choosing contraceptives is the source of information from midwives, 59 respondents (84.3%). Meanwhile, research conducted in 2019 concluded that the majority of sources of information obtained by acceptors were from health workers, namely midwives and it was also stated that there was a significant relationship between the source of information for couples of childbearing age (PUS) and the use of contraception (Siska Santikasari and Puji Laksmi, 2019). Accurate information will usually be obtained from experts in certain fields. A more appropriate source of information about contraception is midwives. Meanwhile, informants for Puskesmas services at family planning clinics include doctors, pharmacists, midwives, nurses, PLKB and health cadres to provide detailed and clear information about pregnancy and contraception (Ririen hardani et al., 2022). Many things are done so that information can be conveyed well to potential acceptors, providing information to acceptors can be provided via WEB.

A WEB-based information system has advantages including that family planning acceptors can access information about family planning anytime and anywhere and are able to increase the work efficiency and effectiveness of related parties (Sinta Maria and Sifa Febrianty Lubis, 2020)

In table 3, it can be seen that there is an influence between the information provided by midwives on the choice of contraceptives for family planning acceptors. Many factors influence a person's choice of contraception, including: sources of information, family planning outreach activities. This aims to ensure that potential acceptors can increase their knowledge, attitudes and awareness of the importance of using contraception (Ratna et al., 2023). Based on research in 2020, it is stated that the description of choosing a postpartum contraceptive can be influenced by factors such as education, knowledge, husband's support, health workers and access to information (Jati Budi Utami et al., 2020). In theory, the more information obtained, the higher the frequency of contraceptive use. The incomplete information received causes a lack of knowledge of potential acceptors in choosing the type of family planning. (Ratna et al., 2023). The information provided by midwives greatly influences clients in making decisions. Based on research conducted by researchers, the respondents in this study, namely family planning acceptors, received information related to family planning in complete categories and this influenced acceptors in using contraception. The acceptor said that the contraception used was because the source of the information received came from the midwife's information. This is supported by research by Putra et al (2020) which states that understanding family planning information has a significant influence on the choice of contraceptive use among women of childbearing age. (Putra et al., 2020).

CONCLUSION

Based on the results of statistical tests, there is a significant influence between midwife information and the choice of contraceptives, where the P-value is <0.05 ($P=0.001$).

SUGGESTION

It is hoped that health workers, especially midwives, can increase the provision of information related to family planning to prospective family planning acceptors.

REFERENCES

Anita Lontaan, Kusmiyati, Robin Dompas, 2014. Faktor –Faktor Yang Berhubungan Dengan

Pemilihan Kontrasepsi Pasangan Usia Subur Di Puskesmas Damau Kabupaten Talaud. *Jurnal Ilmiah Bidan* 2, 27–32.

Badrun Munandar, 2017. Peran Informasi Keluarga Berencana Pada Persepsi Dalam Praktik Keluarga Berencana. *Jurnal Swamabhumi* 2, 50–59.

Dedi Kurniawan, Fenti Dewi Pertiwi, 2021. Faktor-Faktor Yang Berhubungan Dengan Pemilihan Metode Kontrasepsi Implant Pada Wanita Usia Subur Di Kelurahan Katulampa Kota Bogor Tahun 2019. *Jurnal Mahasiswa Kesehatan Masyarakat* 4, 199–207.

Dewi Astuti, Holiday Ilyas, 2015. Faktor-Faktor Yang Berhubungan Dengan Pemilihan Alat Kontrasepsi Suntik. *Jurnal Ilmiah Keperawatan Sai Betik* 11.

Elsa, 2023. Siaran Pers Komnas Perempuan dalam Rangka Memperingati Hari Kontrasepsi Sedunia 2023.

Eminur Itri Sari, 2016. Faktor-Faktor Yang Berhubungan Dengan Rendahnya Minat Ibu Terhadap Penggunaan Metode Kontrasepsi Jangka Panjang Di Bps Sri Romdhati Semin Gunungkidul. Universitas Aisyiyah Yogyakarta, Yogyakarta.

Erlina F Santika, 2023. Persentase Pemuda Perempuan/Pasangannya Pernah Kawin Menurut Jenis/Alat KB yang Digunakan (2023).

Erma Sugiana, ST Aisjah Hamid, Erma Puspita Sari, 2021. Faktor-Faktor yang Mempengaruhi Penggunaan Kontrasepsi Implant 2, 372–377. <https://doi.org/10.33087/jiubj.v2i1i.1142>

Eva Safitriani, Hasbiah, Rizki Amalia, 2022. Hubungan Pengetahuan Sikap Ibu dan Dukungan Suami Dengan Pemilihan Alat Kontrasepsi Implan. *Jurnal Ilmiah Universitas Batanghari Jambi* 22, 364–369. <https://doi.org/10.33087/jiubj.v22i1.1818>

Farida Aryani, 2013. Peran Bidan dalam Konseling Awal Kontrasepsi Suntik DMPA. *Jurnal Ners dan Kebidanan Indonesia* 1, 82–86. [http://dx.doi.org/10.21927/jnki.2013.1\(3\).82-86](http://dx.doi.org/10.21927/jnki.2013.1(3).82-86)

Husna Farianti Amran, 2019. Analisis Efek Samping Penggunaan Metode Kontrasepsi Implan Di Wilayah Kerja Puskesmas Harapan Raya Pekanbaru. *Jurnal Medika Usada* 2, 6–15. <https://doi.org/10.54107/medikausada.v2i2.50>

Inggit Pratiwi, Ulfa Fadilla R, 2020. Keterkaitan Informasi Kb Iud Terhadap Akseptor

- Kbdalam Memilih Kontrasepsi IUD. *Jurnal Kesehatan dan Science* 16, 82–90.
- Jati Budi Utami, Herlin Fitriana, Menik Sri daryanti, 2020. *Gambaran Pemilihan Alat Kontrasepsi Pasca Salin*. Universitas Aisyiyah, Yogyakarta.
- Kemenkes RI, 2021. *Profil Kesehatan Indonesia 2021*.
- Mirawati, Afiatun Rahmah, Amelia Chica Heryani, 2024. Hubungan Komunikasi Informasi Edukasi dengan Penggunaan Metode Kontrasepsi Jangka Panjang di Indonesia: Scoping Review 7, 160–168.
- Novita Eka Kusuma Wardani, Deasy Irawati, Sri Wayanti, 2019. Pengaruh Konseling Terhadap Pengetahuan Dan Sikap Calon Akseptor Kb Dalam Pemilihan AKDR Post Plasenta 12, 1–4.
<https://doi.org/10.21107/pamator.v12i1.5172>
- Nurhikmah, Reskiawati Azis, Mulyana, Nur Aliya Arsyad, 2022. Pengaruh metode Konseling Tentang Iud Terhadap Pengetahuan Ibu Di Puskesmas kota Kabupaten Bantaeng 1, 617–623.
- Putra, Chandra Anugrah and Jailani, Muhammad and Qudsiyah, Ummi and Salahuddin Permadi, Ade, 2020. Pengaruh Pemahaman Informasi KB dan Tingkat Ekonomi Keluarga terhadap Pemilihan Pemakaian Alat Kontrasepsi di Provinsi Kalimantan Tengah. *Jurnal Surya Medika* 5, 81–91.
- Ramariani, Arista, 2022. Analisis faktor-faktor yang mempengaruhi rendahnya minat ibu menggunakan KB di Puskesmas Jambi Kecil Kabupaten Muaro Jambi Provinsi Jambi tahun 2022. *Scientia Journal* 11, 162–172.
- Ratna, Irma Jayatmi, Ageng Septa Rini, 2023. Hubungan Sumber Informasi, Dukungan Suami Dan Tingkat Kecemasan Terhadap Keikutsertaan Akseptor KB IUD. *Jurnal Ilmiah Bidan* 7, 30–39.
- Rendys Septalia, Nunik Puspitasari, 2016. Faktor yang Memengaruhi Pemilihan Metode Kontrasepsi. *Jurnal Biometrika dan Kependudukan* 15, 91–98.
- Ririen hardani, Ayu Lestari, Andi Atirah Masyita, 2022. Analisis Tingkat Pengetahuan dalam Pemilihan dan Penggunaan Kontrasepsi di Kecamatan Tikke Raya Kabupaten Pasangkayu. *Media Publikasi Promosi Kesehatan Indonesia* 5, 852–864.
- Safitri, Rani, n.d. *Aplikasi Media Flashcard Bagi Akseptor KB Dalam Upaya Peningkatan Pengetahuan Dalam Pemilihan Alat Kontrasepsi Di Puskesmas Karangpulo Kabupaten Malang*.
- Sinta Kiki Amelia, Yektingtyastuti, 2024. Pengaruh Konseling dengan Media Diagram KLOP dan ABPK Terhadap Motivasi Penggunaan KB Pasca Salin. *Jurnal Kesehatan Saemakers PERDANA* 7.
<https://doi.org/10.32524/jksp.v7i1.1134>
- Sinta Maria, Sifa Febrianty Lubis, 2020. Sistem Informasi Layanan Peserta Keluarga Berencana Pada Klinik Bidan Roslaini Berbasis Web. *Jurnal Intra Tech* 4.
<https://doi.org/10.37030/jit.v4i2.83>
- Siska Santikasari, Puji Laksmi, 2019. Hubungan Sumber Informasi Dengan Pemakaian Kontrasepsi di Kelurahan Merak Tangerang. *Jurnal Ilmu Kesehatan Bhakti Husada: Health Sciences Journal* 10, 74–87.
<https://doi.org/10.34305/jikbh.v10i1.87>
- Siti Amallia, Yessy Octa Fristika, 2022. Pengaruh Konseling Kontrasepsi Hormonal Terhadap Pengetahuan Akseptor Keluarga Berencana. *Jurnal Kebidanan : Jurnal Ilmu Kesehatan Budi Mulia* 12, 165–171.
- Suci Oktavianah, Sri Hadi Sulistyaningsih, Anik Siti Juhariyah, 2023. Faktor –Faktor yang berhubungan dengan pemilihan alat Kontrasepsi implan pada Wanita usia Subur. *Jurnal Penelitian Perawat Profesional* 5, 512–527.
- Titis Martyas, 2017. Peningkatan Peran Bidan Dalam Konseling Keluarga Berencana (KB) Di Puskesmas Kutawis Kabupaten Purbalingga. *Jurnal Ekonomi, Bisnis dan Akuntansi* 19.
<https://doi.org/10.32424/jeba.v19i4.1103>
- Yati Nur Indah Sari, Urwatil Wusqa Abidin, Sri Ningsih, 2019. Faktor - Faktor Yang Berhubungan Dengan Minat Ibu Dalam Pemilihan Alat Kontrasepsi IUD. *Jurnal kesehatan Masyarakat* 5, 47–59.
<http://dx.doi.org/10.35329/jkesmas.v5i1.308>

THE RELATIONSHIP OF CHRONIC ENERGY DEFICIENCY (CED) IN PREGNANT WOMEN WITH THE INCIDENT OF LOW BIRTH WEIGHT

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ABSTRAK : HUBUNGAN KURANG ENERGI KRONIS (KEK) PADA IBU HAMIL DENGAN KEJADIAN BERAT BAYI LAHIR RENDAH (BBLR)

Latar Belakang : Anemia dalam kehamilan merupakan masalah nasional karena mencerminkan nilai kesejahteraan ekonomi masyarakat. Target global SDG's (Sustainable Development Goals) adalah menurunkan AKI menjadi 70 per 100.000 KH. Tujuan penelitian ini adalah untuk mengetahui hubungan Kurang Energi Kronis (KEK) pada ibu hamil dengan kejadian Berat Bayi Lahir Rendah (BBLR) di RSUD Abdoel Moeloek

Tujuan : tujuan kegiatan yaitu untuk mengetahui hubungan kurang energi kronis (KEK) pada ibu hamil dengan kejadian berat bayi lahir rendah (BBLR)

Metode : Metode penelitian ini menggunakan metode penelitian deskriptif korelatif dengan pendekatan cross sectional jumlah sampel sebanyak 66 orang. Sampel pada penelitian ini adalah diperoleh dengan menggunakan teknik total sampling.

Hasil : Diketahui bahwa lebih dari setengahnya responden tidak mengalami kejadian KEK sebanyak 35 orang (53%), diketahui bahwa lebih dari setengahnya responden mengalami kejadian BBLR sebanyak 41 orang (62,1%), berdasarkan hasil uji statistik *Chi Square*, diketahui bahwa nilai P sebesar 0,000 lebih kecil dari nilai α (0,05), sehingga dapat disimpulkan bahwa terdapat hubungan antara kejadian KEK dengan kejadian BBLR.

Kesimpulan :

Saran : Diharapkan petugas kesehatan khususnya bidan agar lebih meningkatkan konseling dalam pelayanan kesehatan kepada ibu hamil sehingga ibu hamil dapat memperoleh informasi yang cukup tentang gizi terutama agar ibu tidak terkena Kurang Energi Kronis.

Kata Kunci: Kekurangan Energi Kronis, Bayi Baru Lahir Rendah, deskriptif korelatif.

ABSTRACT

Background: Anemia in pregnancy is a national problem because it reflects the value of society's economic welfare. The SDG's (Sustainable Development Goals) global target is to reduce the MMR to 70 per 100,000 KH. The aim of this study was to determine the relationship between Chronic Energy Deficiency (KEK) in pregnant women and the incidence of Low Birth Weight (LBW) at Abdoel Moeloek Regional Hospital.

Objective: untuk mengetahui hubungan Kurang Energi Kronis (KEK) pada ibu hamil dengan kejadian Berat Bayi Lahir Rendah (BBLR) di RSUD Abdoel Moeloek

Method: This research method uses a correlative descriptive research method with a cross sectional approach with a sample size of 66 people. The sample in this research was obtained using total sampling techniques.

Results: It is known that more than half of the respondents did not experience the incidence of CED, 35 people (53%), it is known that more than half of the respondents experienced the incidence of LBW, 41 people (62.1%), based on the results of the Chi Square statistical test, it is known that the value P of 0.000 is smaller than the α value (0.05), so it can be concluded that there is a relationship between the incidence of KEK and the incidence of LBW

Conclusion : It is known that more than half of the respondents did not experience a KEK incident, 35 people (53%). It is known that more than half of the respondents experienced LBW incidents, 41 people (62.1%). Based on the results of the Chi Square statistical test, it is known that the P value of 0.000 is smaller than the α value (0.05), so it can be concluded that there is a relationship between the incidence of KEK and the incidence of LBW.

Suggestion : It is hoped that health workers, especially midwives, will further improve counseling in health services to pregnant women so that pregnant women can obtain sufficient information about nutrition, especially so that mothers are not affected by Chronic Energy Deficiency.

Keywords : Chronic Energy Deficiency, Low Newborn Infants, correlative descriptive.

INTRODUCTION

Globally, the prevalence of anemia in pregnant women throughout the world is 38.2%, with the highest prevalence in the Southeast Asia region (WHO, 2023). Based on data from the Ministry of Health of the Republic of Indonesia, around 40–50% of pregnant women experience anemia, which means 5 out of 10 pregnant women experience anemia. There are 37.1% of pregnant women with Hb levels of less than 11.0 grams/dl, with almost the same proportion in urban (36.4%) and rural areas (37.8%) (Ministry of Health, 2018).

Based on data from the Lampung Provincial Health Service, the prevalence of anemia in pregnant women in this province is still quite high. In 2019, the prevalence of anemia reached 9.06% and increased to 9.10% in 2020 (Lampung Health Service, 2022).

According to data from the Lampung Provincial Health Service, in 2020, of the total number of babies weighed around 145,422, there were 3,169 or 2.2% of LBW cases. In 2021, there will be an increase in LBW cases of around 4,812 or around 3.7% of LBW cases in Lampung Province (Lampung Health Service, 2022). Then on the frequency distribution of LBW at RSUD Dr. H. Abdul Moeloek Bandar Lampung in 2022 there were 52 cases (28.9%).

Pregnant women with CED will have impacts, including babies being born who are LBW and have fatal risks, for example, the baby experiencing malnutrition, baby death, disruption to the child's growth. Prevention that mothers can do is by consuming sufficient amounts of calorie energy (rice, sweet potatoes, etc.) as well as vitamins and minerals found in fruits, vegetables, side dishes and milk. Pregnant women who experience CED have risks, including affecting the fetal growth process, causing miscarriage, abortion and stillbirth (Department of Nutrition and Public Health, FKMUI, 2012).

CED causes disruption to the health of the mother or fetus she is carrying. Pregnant women with CED will experience complaints such as constant fatigue, tingling sensation, pale face. Meanwhile, a fetus that does not grow optimally will cause the baby to be born to have a low birth weight, the development of the fetus's organs will be disrupted, this incident will affect learning ability, cognitive ability, the child tends to be at risk of experiencing disabilities, and there can be a risk of the baby being stillborn, this which can occur in fetuses conceived by mothers with CED, including miscarriage (Kristiyanasari, 2014). Based on the data and results of the pre-survey above, researchers are interested in conducting research on

the relationship between chronic energy deficiency (KEK) in pregnant women and the incidence of low birth weight (LBW) babies at Abdoel Moeloek Regional Hospital in 2024.

RESEARCH METHODS

This research method uses methods Correlative descriptive research with cross sectional research design. Thatt cross sectional is research to study systematic correlation or relationship between risk factors, which are variable independent (risk variable) and variable dependent (effect variables) will be collected at the same time. The population in this research is all TM III pregnant women at the Community Health Center, numbering 66 people.

The number of samples in this research is all TM III pregnant women at the Community Health Center numbering 66 people. In this research the instrument used for data collection is checklist form to collect data mother during her pregnancy and check-ups pregnancy using LILA and From this measurement data will be obtained entered in the checklist sheet, for data LBW babies also use sheets checklist for when the baby is born The data will be recorded as to whether it is included into LBW or not LBW. Data collection methods used by the author of this research is with using primary data, where the mother is pregnant third trimester sample. In this research, the analysis design used is univariate analysis and also bivariate which aims to describe each variable used in this research by looking frequency distribution with size percentage/proportion for each variable and also links between variables research. Univariate analysis is analysis carried out on each variable of the results study. Bivariate analysis is analysis which was carried out on 2 variables suspected to be related or correlated 5. In analysis can be carried out statistical testing with Chi Square.

RESEARCH RESULTS

Univariate Analysis

KEK Incident

Table 1
Frequency Distribution of Respondents Based on KEK Events

Incident KEK	F	%
Not KEK	35	53
KEK	31	47

Based on table 1, the frequency distribution of respondents based on the occurrence of CED, it is known that more than half of the respondents did not experience CED, 35 people (53%) and less than half

of the respondents experienced CED, 31 people (47%).

Tabel 2
Frequency Distribution of Respondents Based on LBW Events

Incident BBLR	F	%
Not BBLR	41	62,1
BBLR	25	37,9

Based on table 2, the frequency distribution of respondents based on LBW incidents shows that a small number of respondents experienced LBW incidents, 41 people (62.1%) and the majority of respondents did not experience LBW incidents, 25 people (37.9%).

Bivariate Analysis

Table 3
Frequency Distribution of Respondents Based on the Occurrence of KEK with LBW incident

Incident KEK	Incident BBLR				Total		P Value
	not BBLR	BBLR			F	%	
Tidak KEK	30	85,7	5	14,3	35	100	0,000
KEK	11	35,5	20	64,5	31	100	

Based on table 3, it can be seen that of the 35 respondents who did not experience CED, it is known that the majority of respondents did not experience LBW, 30 people (85.7%) and a small number of respondents experienced LBW, 5 people (14.3%). Meanwhile, of the 31 respondents who experienced CED, it is known that less than half of the respondents did not experience LBW, 11 people (35.5%) and more than half of the respondents experienced LBW, 20 people (64.5%). Based on the results of the Chi Square statistical test, it is known that the P value of 0.000 is smaller than the α value (0.05), so it can be concluded that there is a relationship between the incidence of KEK and the incidence of LBW.

Incidents of LBW

Based on table 2, the frequency distribution of respondents based on LBW incidents shows that a small number of respondents experienced LBW incidents, 41 people (62.1%) and the majority of respondents did not experience LBW incidents, 25 people (37.9%). Pregnant women who were previously normal suddenly become at high risk because pregnancy is dynamic. If a pregnant woman has a poor health status, for example the mother suffers from anemia, the baby will.

If the baby is born with a low birth weight, if the baby is born LBW, there will be a risk of illness such as infection of the respiratory tract and risk of death. Bleeding during labor or after delivery, health problems, and even death are risks for pregnant women who suffer from anemia.

One way to assess the nutritional status of pregnant women is by taking anthropometric measurements. Weight gain in pregnant women and LILA measurements during pregnancy are most frequently used. LILA is anthropometry which can describe the nutritional status of pregnant women and to determine the risk of CED or malnutrition. Mothers whose LILA size is below 23.5 cm are at risk of giving birth to LBW (low birth weight) babies.

If at the beginning of pregnancy the mother has a normal LILA or BMI but the mother's weight does not increase as recommended, then the mother is at risk of giving birth to a LBW baby. Apart from that, according to Assefa, et al. (2012), both chronic and acute energy deficiency have a relationship and influence on the birth weight of the baby, but acute energy deficiency has a more pronounced effect compared to chronic energy deficiency.

Pregnant women who have experienced CED are advised to increase their nutritional intake with foods that are high in calories and high in protein and get additional food from the Community Health Center for free for those who cannot afford it or are poor.

Anggraini et al. (2014) have conducted research and concluded that LILA and LBW have a significant relationship. In addition, pregnant women who have LILA <23.5 cm are 4.3 times more likely to give birth to LBW babies.

Relationship between the incidence of KEK and the incidence of LBW

Based on table 4.3, it can be seen that of the 35 respondents who did not experience CED, it is known that the majority of respondents did not experience LBW, 30 people (85.7%) and a small number of respondents experienced. The incidence of LBW was 5 people (14.3%).

Meanwhile, of the 31 respondents who experienced CED, it is known that less than half of the respondents did not experience LBW, 11 people (35.5%) and more than half of the respondents experienced LBW, 20 people (64.5%).

Based on the results of the Chi Square statistical test, it is known that the P value of 0.000 is smaller than the α value (0.05), so it can be concluded that there is a relationship between the incidence of KEK and the incidence of LBW.

An imbalance between intake to meet needs and energy expenditure is a specific cause of CED 7. If a pregnant woman suffers from malnutrition or CED, this condition will greatly affect the growth of the fetus she is carrying. This influence will determine the birth weight of the baby which will be less than it should be. This low baby weight will greatly influence the death of larger babies. A study in Guatemala (United States) showed that the lower the birth weight of newborns, the greater the mortality rate.

The results of the research above are also supported by research conducted by Kartikasari (2011) regarding the relationship between KEK and the nutritional status of pregnant women at the Bangetayu Community Health Center, Semarang City. Statistical tests show that between the incidence of Chronic Energy and the incidence of LBW, the calculation results obtained a value of $p=0.036$ ($p<0.05$), so it can be concluded that there is a significant relationship between CED in pregnant women and LBW.

CONCLUSION

Based on the results of the research and discussion, it can be concluded that the relationship is lacking Chronic Energy in Pregnant Women with Low Birth Weight (LBW) :

1. It is known that more than half of the respondents did not experience a KEK incident, 35 people (53%).
2. It is known that more than half of the respondents experienced LBW incidents, 41 people (62.1%).
3. Based on the results of the Chi Square statistical test, it is known that the P value of 0.000 is smaller than the α value (0.05), so it can be concluded that there is a relationship between the incidence of KEK and the incidence of LBW.

SUGGESTION

It is hoped that health workers, especially midwives, will further improve counseling in health services to pregnant women so that pregnant women can obtain sufficient information about nutrition, especially so that mothers are not affected by Chronic Energy Deficiency.

REFERENCES

Dinkes Ciamis. (2018). Profil Kesehatan Kab. Ciamis. Kabupaten Ciamis.
Dinkes Jawa Barat. (2019). Laporan Akuntabilitas Kinerja Instansi Pemerintahan. LAKIP Propinsi Jawa Barat. Bandung.

Kemenkes. (2018). Survei Demografi dan Kesehatan Indonesia (SDKI) Jakarta: Badan Pusat Statistik.
Departemen Gizi dan Kesehatan Masyarakat. Fakultas Kesehatan Masyarakat Universitas Indonesia. (2019). Gizi dan Kesehatan Masyarakat. Jakarta : Rajawali Pers.
Puskesmas Rajadesa. (2018). Dinas Kesehatan Kabupaten Ciamis, Profil Kesehatan Puskesmas Rajadesa dan Laporan Bulanan Puskesmas. Ciamis.
Arikunto, (2019). Prosedur Penelitian Suatu Pendekatan Praktik. Jakarta : Rineka Cipta.
Departemen Kesehatan RI. (2019). Pedoman Pemantauan Wilayah Setempat Gizi. Jakarta : Departemen Kesehatan RI.
Marni (2022). Gizi Dalam Kesehatan Reproduksi. Yogyakarta : Pustaka Pelajar.
Supriasa. (2020). Penilaian Status Gizi. Jakarta : EGC
Notoatmodjo. (2020). Promosi Kesehatan Teori dan Aplikasinya. Jakarta : Rineka Cipta.
Widianingsih, D. (2022) 'Faktor-Faktor Yang Mempengaruhi Kejadian Berat badan lahir rendah Pada Ibu Melahirkan Di Ruang Perinatologi Rumah Sakit Umum Daerah 45 Kuningan', Jurnal Ilmu Kesehatan Bhakti Husada, 1(1), pp. 18–21.
Setiati, A.R. and Rahayu, S. (2018) 'Faktor Yang Mempengaruhi Kejadian BBLR (Berat Badan Lahir Rendah) Di Ruang Perawatan Intensif Neonatus RSUD DR Moewardi Di Surakarta', (Jkg) Jurnal Keperawatan Global, 2(1), pp. 9–20. doi:10.37341/jkg.v2i1.27.
Ruaida, N. and Soumokil, O. (2018) 'Hubungan Status Kek Ibu Hamil Dan Bblr Dengan Kejadian Stunting Pada Balita Di Puskesmas Tawiri Kota Ambon', Jurnal Kesehatan Terpadu (Integrated Health Journal), 9(2), pp. 1–7. doi:10.32695/jkt.v2i9.12.
Marlenywati, Hariyadi, D. and Ichtayati, F. (2015) 'Faktor-Faktor Yang Mempengaruhi Kejadian BBLR di RSUD Dr. Soedarso Pontianak.', Vokasi Kesehatan, 1(5), pp. 154– 160. Available at: <http://ejournal.poltekkespontianak.ac.id/index.php/JVK/article/view/31>.
Alfianti, C.I. and Darmawati (2016) 'Factors Influencing the Occurrence of Low Birth Weight in Banda Aceh', pp. 1–6.
Fatimah, S. and Yuliani, N.T. (2019) 'Hubungan Kurang Energi Kronis (Kek) Pada Ibu Hamil Dengan Kejadian Berat Bayi Lahir Rendah (Bblr) Di Wilayah Kerja Puskesmas Rajadesa

- Tahun 2019', *Journal of Midwifery and Public Health*.
- Fitri Nur Indah and Istri Utami (2020) 'Faktor-Faktor Yang Berhubungan Dengan Kejadian Berat Badan Lahir Rendah (Bblr)', *Intan Husada Jurnal Ilmu Keperawatan*, 8(1), pp. 19–35. doi:10.52236/ih.v8i1.173.
- Suryati (2018) 'Faktor-Faktor Yang Mempengaruhi kejadian BBLR di Wilayah Kerja Puskesmas Air Dingin', *Artikel Penelitian*, 6(April), pp. 19–28.
- Aryastami, N. K. (2017). Kajian Kebijakan dan Penanggulangan Masalah Gizi Stunting di Indonesia. *Buletin Penelitian Kesehatan*, 45(4). <https://doi.org/10.22435/bpk.v45i4.7465.233-240>.
- Ernawati, A. (2020). Gambaran Penyebab Balita Stunting di Desa Lokus Stunting Kabupaten Pati. *Jurnal Litbang: Media Informasi Penelitian, Pengembangan dan IPTEK*, 16(2), 77–94. <https://doi.org/10.33658/jl.v16i2.194>.
- Hadi, H., Fatimatasari, F., Irwanti, W., Kusuma, C., Alfiana, R. D., Asshiddiqi, M. I. N., Nugroho, S., Lewis, E. C., & Gittelsohn, J. (2021). Exclusive Breastfeeding Protects Young Children from Stunting in a Low-Income Population: A Study from Eastern Indonesia. *Nutrients*, 13(12), 4264. <https://doi.org/10.3390/nu13124264>.
- Jannah, M., & Nadimin. (2021). The Relationship of Chronic Energy Deficiency (KEK) in Mothers with Stunting Incidence in Toddlers in the Work Area of the Turikale Health Center. *Media Kesehatan Politeknik Kesehatan Makassar*, 16(2).
- Kpewou, D. E., Poirot, E., Berger, J., Som, S. V., Laillou, A., Belayneh, S. N., & Wieringa, F. T. (2020). Maternal mid-upper arm circumference during pregnancy and linear growth among Cambodian infants during the first months of life. *Maternal & Child Nutrition*, 16(S2). <https://doi.org/10.1111/mcn.12951>
- Lake, A. (2017, Januari 18). The first 1,000 days: a singular window of opportunity. unicef.org/blog. <https://blogs.unicef.org/blog/first-1000-days-singular-opportunity/>
- Lukman, T. N. E., Anwar, F., Riyadi, H., Harjomidjojo, H., & Martianto, D. (2021). Birth Weight and Length Associated with Stunting among Children Under-Five in Indonesia. *Indonesian Journal of Nutrition and Food*, 16(Supp.1), 99–108. <https://journal.ipb.ac.id/index.php/jgizipangan/issue/view/2809Manggabarani>, S.,
- Rani Rahmasari Tanuwijaya, & Irfan Said. (2021). Kekurangan Energi Kronik, Pengetahuan, Asupan Makanan dengan Stunting : Cross-sectional Study. *Journal of Nursing and Health Science*, 1(1), 1–7. <https://ejournalstikes-pertamedika.ac.id/index.php/jnhs/article/view/13/10>.
- Meilyasari, F., & Isnawati, M. (2014). Faktor Risiko Kejadian Stunting pada Balita Usia 12 Bulan di Desa Purwokerto Kecamatan Patebon Kabupaten Kendal. *Journal of Nutrition College*, 3(2), 303–309. <https://doi.org/10.14710/jnc.v3i2.5437>.
- Neves, P. A. R., Barros, A. J. D., Gatica-Domínguez, G., Vaz, J. S., Baker, P., & Lutter, C. K. (2021). Maternal education and equity in breastfeeding: trends and patterns in 81 low-and middle-income countries between 2000 and 2019. *International Journal for Equity in Health*, 20(1), 20. <https://doi.org/10.1186/s12939-020-01357-3>
- Nurfatimah, N., Ramadhan, K., Entoh, C., Longgupa, L. W., & Hafid, F. (2021). Continuity of Midwifery Care Implementation to Reduce Stunting. *Open Access Macedonian Journal of Medical Sciences*, 9(E), 1512–1516. <https://doi.org/10.3889/oamjms.2021.7062>
- sdatin
- Kemenkes RI. (2018). Situasi Balita Pendek (Stunting) di Indonesia.
- Rakhmahayu, A., Dewi, Y. L. R., & Murti, B. (2019). Logistic Regression Analysis on the Determinants of Stunting among Children Aged 6-24 Months in Purworejo Regency, Central Java. *Journal of Maternal and Child Health*, 4(3), 158–169. <https://doi.org/10.26911/thejmch.2019.04.03.03>