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<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Correlation between Body Mass Index on Presenteeism and Absenteeism on Dislipidemia Worker</td>
<td>Ahdian Saptavani, Tjipto Suwandi, Arief Wibowo</td>
</tr>
<tr>
<td>2.</td>
<td>Improving the Operational Efficiency of OPD using Lean Method – Value Stream Mapping</td>
<td>A P Pandit, Priyanka Arland, Shreya Rao</td>
</tr>
<tr>
<td>3.</td>
<td>Study the Relationship between Mindfulness with Aggression, Perceived Stress and Social Anxiety in Students</td>
<td>Sara Naddaf, Alireza Heidari, Manseoreh Nsirharand, Shima Hajmohamadi</td>
</tr>
<tr>
<td>4.</td>
<td>Knowledge and Preventive Practices Regarding Dengue Fever among Adults Accompanying Patients in a Tertiary Care Hospital in Rural Area of Sonepat</td>
<td>Sanjay Kumar Jha, Sanjeet Singh, JP Majra</td>
</tr>
<tr>
<td>5.</td>
<td>The Influence of Leadership, Experience of Work, and Motivation to Performance of Nursing Employees Personnel in Banjarmasin</td>
<td>Fauzie Rahman, Adenan, Nita Pujianti, Anggun Wulandari, Nur Laily, Siti Aina PW, Farid Ilham M</td>
</tr>
<tr>
<td>6.</td>
<td>Safe Limits Concentration of Ammonia at Work Environments through CD8 Expression in Rats</td>
<td>Abdul Rohim Tualeka, Herлина Novita Hasyim, Sischa Bangkit Puspita, Nanang Nurcahyono</td>
</tr>
<tr>
<td>7.</td>
<td>Mothers Knowledge on Malnutrition: Community based Cross Sectional Study</td>
<td>Ansuya, Baby S Nayak, B Unnikrishnan, Anice George, Shashidhara YN, Suneel C Mundkur</td>
</tr>
<tr>
<td>8.</td>
<td>Correlation of Atherogenic Indices and IMA with Glycaemic Control in Diabetic Patients with and without Dyslipidemia</td>
<td>Sudha K, Reshma K, Afzal Ahmad, Aradhana Marathe</td>
</tr>
<tr>
<td>9.</td>
<td>Factor Related to Urine Trans, Trans-muconic Acid (TT-MA) Levels of Shoemaker in Tambak Oso Wilangun Surabaya</td>
<td>Sam Sam Eka Bada, Abdul Rohim Tualeka, Noeroel Widajati</td>
</tr>
<tr>
<td>10.</td>
<td>Effect of Food Containing High Fe (Iron) Intake to Urinary Trans, Trans-muconic Acid (Tt-ma) Levels on Workers Exposed to Benzene</td>
<td>Siska Nirmawati, Abdul Rohim Tualeka, Aniss Catur Adi</td>
</tr>
<tr>
<td>11.</td>
<td>Awareness and Perception of Bioethics among Medical Undergraduate Students and Interns in a Private Medical College in Mangalore</td>
<td>Animesh Jain, Avinash Kumar, Pragya Maheshwari, Krutika Singh, Kristel Bhalia, Manognya Chakragari, Saumya Joshi</td>
</tr>
</tbody>
</table>
12. Detoxification of Benzoic Acid in Workers Exposed to Toluene Using Food Rich in Glycine ............................................. 64
   Abdul Rohim Tualeka, Michael Agung Irianto Adli Prasetyo, Ike Agustin Rachmawati, Erwin Dyah Nawawinetu

13. Bone Marrow Aspiration in Pancytopenia in and around Muzaffarnagar .......................................................... 70
   Ritika Kansal, Rajnish Kumar, R K Thakral, Pradeep Kumar, Shipra Vats, Shweta Saini, Anil K Agarwal

14. Implication of Malnutrition on Human Capital: Bridging the Inequality through Robust Economic Policies .......................................................... 75
   Aparna Ruia, Rajul Kumar Gupta, Gargi Bandyopadhyay

15. The Effect of Workload on the Job Stress of Nurses in Outpatient Care Unit of Public Hospital Surabaya, Indonesia .......................................................... 80
   Satria Sandianto, Abdul Rohim Tualeka, Diah Indriani

16. Perceived Barriers for Utilization of Health Care System among Married Women with Gynaecological Morbidity in Udupi Taluk, Karnataka .......................................................... 85
   Lida Mathew, Ansuya, Lakra Alma Juliet Francis

17. Tubercular Carditis and Pericarditis – An Autopsy Study of Heart in Sudden Death .................................................. 89
   N.S. Kamakeri, Smitha M, Sunilkumar S Biradar

18. Emotional Intelligence and Juvenile Delinquency: A Nexus with Crime .......................................................... 93
   Amrita Mohanty, Hiranmaya Nanda

19. Obesity, Lipid Profile and Inflammation: A Study of Adult Women of Low Socioeconomic Background from Mumbai City .......................................................... 98
   Sharvari D Malshe, Shobha A Udipi

   Hajera Rabbani, MSK Swarupa, Mohammed Sarosh Ahmed, A Chandrasekhar

21. Study of Immunization Status of Children Less than 5 Years of Age in a Tertiary Health Care Institution of Amritsar - A Hospital based Study .......................................................... 108
   Kuldip Passi, Anil Sood, Utkarsh Passi, Eshaan Passi, Priyanka Devgun

22. Midline Diastema Closure by Interdisciplinary Approach-A Case Report .......................................................... 115
   Ashutosh Mishra, Kundabala M, Neeta Shetty, Kamakshi Alekhya, Sangeetha U Nayak

23. Changing Health Status and Service Needs: Health Care System in Kerala .......................................................... 119
   Saisree K G, M Lathika

24. Congenital Disorders in India – Where are We? .......................................................... 125
   Kavya R

25. Stakeholder Collaboration Model to Empower Integrated Health Education Centers for Non-communicable Diseases: A Study in Bengkulu .......................................................... 133
   Yandrizal, Rizanda Machmud, Melinda Noer, Hardisman, Afrizal, Nur Indrawati Lipoeto, Ekowati Rahajeng

26. Safety of Doctors at their Workplace in India: Perspectives and Issues .......................................................... 139
   Amit Marwah, Rajesh Ranjan, Mitasha Singh, Meenakshi, J K Das, Ranabir Pal
27. Effectiveness of Pranic Healing on Functional Health and Wellbeing of Inmate at Mysore Central Prison ................................................................. 146
   Srikanth N Jois, Lancy D’Souza, Gayathri R

28. Tea Ash - A New Medium for Water Defluoridation ................................................. 152
   Manjiri A Deshmukh, Arun S Dodamani, Gundabakhta N Karibasappa, Mahesh R Kairnar,
   Rahul G Naik, Harish C Jadhav

29. Developing a Framework for Emotional Intelligence (EI) based Functions in a Small Organisation .......... 158
   Manas Ranjan Rath, S Vasantha

   R K Singhal, Ranjana Singh, Neelam Sharma

31. The Role of Midwife through Antenatal Class Pregnancy for Improvement Delivery Assistance with Professional Health Workers ......................................................................................... 170
   Fauzie Rahman, Lenie Marlinae, Ratna Setyaningrum, Andini Octaviana Putri, Hilmiyati

32. Prevalence and Predictors of Adverse Drug Effects with Second Line Anti-TB drugs Under Programmatic Management of Drug Resistant Tuberculosis (PMDT) Services in Amritsar District ......................................................... 175
   Manisha Nagpal, Harpreet Kaur, Priyanka Devgun, Naresh Chawla

33. Maxillary First Molar with Two Palatal Canals: A Rare Case Report ....................... 181
   Soniya Hussain, Kundabala Mala, Roma M

34. Intralesional Bleomycin: An Excellent Alternative Method for Oral Lymphangioma in Children .......... 185
   Sarika Sharma, Sudhanshu Sharma, Anil Goyal

35. Clinicopathological Study of Breast Cancer in a Tertiary Care Hospital in Muzaffarnagar- Uttar Pradesh ................................................................................................................................. 188
   Purva Sharma, Anupam Varshney, Alok Mohan, Rajnish Kumar, Kanchan Kamini,
   Prashant Mishra, Anil K Agarwal

36. Spectrum of Lymphadenopathies on Fine Needle Aspiration Cytology in and around Muzaffarnagar ........ 194
   Shipra Vats, Brig. G S Manchanda, Kamna Gupta, Pradeep Sharma, Ritika Kansal,
   Sweety Goel, Veena K Sharma

37. The Performance of Medical Laboratory Technician Based on Situation Awareness and Psychological Capital with the Work Engagement Mediation ........................................................................................................... 199
   Muhamad Muslim, Fendy Suhariadi, Nyoman Anita Damayanti, Windhu Purnomo

38. Yoga Interventions for Oxidative Stress and Antioxidant Status ........................................... 203
   Jyothi Chakrabarty, Vinutha R Bhat

39. Intermittent Hypoxia-Hyperoxia Exposures Improve Cardiometabolic Profile, Exercise Tolerance and Quality of Life: A Preliminary Study in Cardiac Patients ................................................................. 208
   Oleg Glazachev, Davide Susta, Elena Dudnik, Elena Zagaynaya

40. Comparative Analysis of Conceptual Models of Social Anxiety Disorder ......................... 215
   Olga Sagalakova, Dmitry Truevtsev, Anatoly Sagalakov
41. Knowledge on Heart Smart Diet among Hypertensive Clients in Selected Urban Areas of Mangalore City .................................221
   Abin P Simon, Vimala Prasad, Vinish V

42. Job Satisfaction of Work Life Balance of Women Employed in Unorganised Sector in Kanchipuram District, Tamilnadu .............................226
   Ramya Thiagarajan, K Tamizhjyothi

43. Knowledge on Effects of Substance Abuse among Adolescents: - A Descriptive Study ..................................232
   Vinish V, Vimala Prasad

44. The Effect of Se‘i (Smoked Beef) Toward the Improvement of the Bcl-2 Protein Expression on Colon Cells of Balb/c Strain Mice as a Carcinogenesis Indicator .................................................................238
   Apris A Adu, Ketut Sudiana, Santi Martini, Mas’amah, Husaini

45. Malaria and Nutritional Status among Female Adolescents in West Sulawesi, Indonesia ..................243
   Noor Bahri Noer, Veni Hadju, Ridwan M Thaha, Anwar Daud, Andi Imam Arundhana, Anwar Mallongi

46. The Influence of Leadership Style of Midwife Coordinator Toward the Performance of Village Midwives on Antenatal Care through the Job Involvement ..............................................................................249
   Syamsul Arifin, Fendy Suhariadi, Nyoman Anita Damayanti

47. The Analysis of Strategic Plan on Sambang Lihum Psychiatric Hospital Kalimantan, Indonesia 2016-2021 toward Drug Rehabilitation with Good Clinical Governance Framework ..................................................253
   Riswan Iriyandy, Husaini, Eko Suhartono, Roselina Panghiyangani, Bahrul Ilmi, Nurul Rahmi

48. The Role of Domicile on the Achievement of Village Midwife Performances in Antenatal Care through a Job Involvement ..............................................................258
   Syamsul Arifin, Fendy Suhariadi, Nyoman Anita Damayanti

49. A Cause-effective Relationship between Tourism and Food Culture..........................................................263
   K Damodaran

50. Screening of Antifungal Activity of Ganoderma Lucidum Extract Against Medically Important Fungi ..... 269

51. Study of Infant Feeding Practices in the Urban Slums of Ballari City .................................................273
   Bellara Raghavendra, Saraswati V Sajjan, T Gangadhara Goud

52. Exploratory and Confirmatory Factor Analysis of an Urdu-version of the Summary of Diabetes Self-care Activities Measure (U-SDSCA) ........................................................................................................281
   Rashid M Ansari, Hassan Hosseinzadeh, Mark Harris, Nicholas Zwar

53. Preparedness of Dental Students to Manage Medical Emergencies in Clinical Dental Set-up: A Cross-sectional Questionnaire Survey ..........................................................289
   Nishtha Singh, Priyanka Kachwaha, Deepak Kumar Singhal

54. Relationship between Nutritional Status, Anemia, Birth Labor, and Delayed of Reference to Maternal Mortality in Katingan 2013-2015 .........................................................295
   Musafaah, Fauzie Rahman, Anggun Wulandari, Susi Yani T

55. Expression of Gen Monocyte Chemoattractant Protein 1 (MCP-1) mRNA on Preeclampsia ..................300
   Salmah Arafah, Rosdiana Natzir, Syahrul Rauf, Mochammad hatta, Yudit Patiku, Ariyanti Saleh
56. Does South Africa need a HIV-AIDS Regulatory Framework as a Public Management Tool for HIV-AIDS Programmes?....................................................................................................................305
   Shayhana Ganesh, Renitha Rampersad

57. Analysis of the Cost Effectiveness of Improving Nutrition Intake and Nutritional Status in Patients of Reproductive Age Undergoing Haemodialysis Therapy in Makassar..................................................................................................................309
   Robert V Philips, Alimin Maidin, Veni Hadju, Burhanuddin Bahar

58. Model of Hypertension Transmission Risks to Communities in Gorontalo Province ..................................................314
   Irwan, Anwar Mallongi

59. Relationships of B-RAF Immuno-Expression with Clinic Pathological Features in Patients with Colorectal Carcinoma in Wahidin Sudirohusodo Hospital Makassar..................................................................................................................321
   Warsinggih, Nengah Winata

60. Application of the Batho Pele Principles as a Quality Management Tool in HIV-AIDS Healthcare in South Africa .................................................................................................................................327
   Shayhana Ganesh, Renitha Rampersad

61. Relationships between Smoking Habits and the Hypertension Occurrence among the Adults of Communities in Paniai Regency, Papua Indonesia ..................................................................................................332
   Robby Kayame, Anwar Mallongi

62. A Study on Challenges Faced by IT Organizations in Business Process Improvement in Chennai .......... 337
   Ranjith Gopalan, A Chandramohan

63. Tenggeng Dance Case as a Free Sex Media in Lani People Culture and its Impact on the Transmission of Sexually Transmitted Diseases and HIV / AIDS ..............................................................................342
   Enos Henok Rumansara, Anwar Mallongi

64. The Curative Effect of Ajwa Dates Toward Hyperuricemia Levels in Wistar Rat (Rattus Norvegicus) ........ 347
   Fatmawaty Mallapiang, Syarfaini, Azrifual

65. The Nationalism Attitude of Dayak in Borders Jagoi Babang Bengkayang District, Indonesia .......... 352
   Fatmawati

66. Correlation between Calciferol Serum Level and Rhinitis Allergy ........................................................................357
   Abdul Qadar Punagi, Ayu Ameliyah, Sutji P Rahardjo, Eka Savitri, Firdaus Hamid

67. The Investigation of the Lactic Acid Change among Employee of National Electrical Power Plan .......... 361
   Syamsiar S Russeng, Lalu Muhammad Saleh, Devintha Virani, Ade Wira Listrianti Lattief, Anwar Mallongi

68. Bacterial and Viral Pathogen Spectra of ARI among the Children Below 5 Years Age Group in Tribal and Coastal Regions of Odisha ..................................................................................................................366
   Bhagyalaxmi Biswal, Bhagirathi Dwibedi, Jagadish Hansa, Shantanu Kumar Kar

69. Covariates and Prevalence of Obesity among the Adults in a Rural Area of Meerut, UP: A Community based Study ........................................................................................................................................373
   Monika Gupta, Pawan Parashar, Arvind K Shukla, Ahmad S, Chhavi Kiran Gupta

70. Effectiveness of Tembelekan Plants (Lantana Camara Linn) to Aedes Aegypti Larvae Mortality ............ 379
   Zrimurti Mappau, Fajar Akbar, Adriyani Adam
71. Relationships between Blood Mercury Levels and SGPT among Communities Exposed to Mercury in Small Scale Gold Mining Village of Indonesia, 2017 ................................................................. 385
   *Umar Fahmi Achjadi, Yuli Kristianingsih, Anwar Mallongi*

72. Preparation and Antioxidant Activity of Methanol Extract of *Myrmecodia rumphii* Becc ......................... 391
   *Yenni Pintauli Pasaribu, Yorinda Bayang, Ivylentine Datu Pallitin, Taslim Ersam, Yatim Lailun Nimah*

73. Nutrient Contents of Moringa Leaves based on Leaf Age........................................................................... 397
   *Andi Salim, Muh. Hasyim, Adriyani Adam*

74. A Genetic Algorithm based Protein Signal Pathway Analysis ........................................................................ 402
   *S Jeyabalan, V Cyril Raj, S Nallusamy*

75. Bureaucratic Reform of Health Services in Merauke Regency Under an Institutional Perspective ............... 407
   *Samel W Ririhena, Alexander P Tjilen*

76. Study of Excess Fluoride Ingestion and Effect on Liver Enzymes in Children Living in Jodhpur District of Rajasthan ........................................................................................................... 412
   *Suman Rathore, Chetram Meena, Zaozianlungliu Gonmei, G S Toteja, Kumud Bala*

77. Nurse-Led Early Initiation of Breastfeeding on the LATCH Scoring System ................................................ 417
   *Geena Louis D’Souza, Sonia R.B D’Souza, Pratibha Kamath, Leslie E Lewis*

78. Behavioral Responses to Noise in Preterm Infants Admitted to a Neonatal Intensive Care Unit of a Tertiary Referral Hospital in South India ............................................................................................................ 422
   *Sonia R.B D’Souza, Leslie E Lewis, Vijay Kumar, Hari Prakas*

79. Infection Control Risk Assessment Tuberculosis on Children based Area in the City of Banjarbaru .............. 427
   *Ruslan Muhyi, Rosellina Parahiyangani, Lenie Marlinae, Fauzie Rahman, Dian Rosadi*
Relationship between Nutritional Status, Anemia, Birth Labor, and Delayed of Referrence to Maternal Mortality in Katingan 2013-2015

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  3Dinas Kesehatan Katingan Region, Central Kalimantan Province

ABSTRACT

Event of mortality is basically the end of the accumulation process (outcome) of the various causes of mortality directly or indirectly. In Katingan, maternal mortality rate is above the national average since 2013, 2014, and 2015 respectively following cases 322.71, 556.52 cases, and 417.83 cases per 100,000 live births. Meanwhile, national targets are at 228 per 100,000 live births. McCarthy and Maine proposed three factors that influence maternal mortality is close determinants, determinants and determinants far between. Nutritional status, anemia, birth attendants, and the delay between the referral is a determinant of maternal mortality. The design / research design used in the study is analytic observational case control, which is a risk factor research study with retrospective approach. This study was conducted in Katingan for 7 months ie from February to August 2016. The control population consisted of all mothers postpartum in Katingan who did not experience maternal mortality during the years 2013 to 2015. The sample in this study as many as 32 cases. The results showed that the nutritional status, anemia status, and birth attendants have no significant relationship with maternal mortality, with a p-value respectively as follows 0.113, 0.113 and 0.024. However, delayed reference has a significant association with maternal mortality with p-value = 0.0001.

Keywords: nutritional status, anemia, birth attendants, maternal mortality

INTRODUCTION

Event of mortality is basically the end of the accumulation process (outcome) of the various causes of mortality directly or indirectly. The incidence of mortality in the region from time to time to provide an overview development of public health and are used as indicators in assessing the success of development programs and health services. One of the indicators in development programs and health services is the maternal mortality rate (MMR).

Maternal mortality is the mortality of every woman during pregnancy, childbirth or within 42 days after the end of pregnancy from any cause, regardless of age and location of the pregnancy, by any cause related to or aggravated by pregnancy or its handling but not by accident or incidental (factor accidental). This is consistent with the definition of the International Statistical Classification of Diseases and Related Health Problems (ICD). Maternal Mortality Rate (MMR) is then defined as the number of maternal mortality over a period of time in 100,000 live births.

Based on data from the World Health Organization (WHO) in 2015 estimated there will be 303,000 maternal mortality in 2015, the maternal mortality as a result of complications arising from pregnancy and childbirth, it is estimated that there is a maternal mortality rate of 300 per 100,000 live births (estimated maternal mortality). This means that one woman in the world will die every minute. 58% of maternal mortality occur in developing countries such as Indonesia, and in fact most of these mortality are preventable. The maternal mortality rate (MMR) in Indonesia in 2012 was 359 per 100,000 live births so that it is almost certain that Indonesia would not be able to achieve the Millennium Development
Goals (MDG’s), reducing the MMR to 102 per 100,000 live births in 2015.

AKI is high in a region basically describes a low degree of public health and potentially cause economic and social deterioration in the level of the household, community and national levels. However, the biggest impact of maternal mortality in the form of decreased quality of life of infants and children caused shock in the family and later influenced the development of the child. Based on data from Central Kalimantan profile of maternal mortality in 2014 showed a significant increase from the year 2013 increased by 75 cases to 101 cases in 2014. In Katingan, maternal mortality rate is above the national average since 2013, 2014, and 2015 respectively following cases 322.71, 556.52 cases, and 417.83 cases per 100,000 live births. Meanwhile, national targets are at 228 per 100,000 live births.

McCarthy and Maine proposed three factors that influence maternal mortality is close determinants, determinants and determinants far between. The process that is closest to the incidence of maternal mortality, referred to as a determinant close to that pregnancy itself and complications in pregnancy, childbirth and the postpartum period (obstetric complications). Close determinant is directly influenced by the determinants of that status of maternal health, reproductive status, access to health care, behavioral health care / health services utilization and other factors that are unknown or unexpected. In addition, there is also a determinant much that will affect the incidence of maternal mortality through its influence on the determinant between, which includes socio-cultural and economic factors, such as the status of women in the family and society, the status of the family in society and the status of the community.

According to the results of research conducted by Fibriana of 2007 states that birth attendants do not have a relationship with the mother’s mortality. While the delay in referral, anemia status, and nutritional status have a relationship with the maternal mortality (Fibriana AI, 2007). In connection with this, then do research to explain the relationship between nutritional status, anemia, Helper Maternity and Referral Delay with Maternal Mortality in Katingan in 2013-2015 as in 2010-2012 no data was incomplete so the research is taken just the year 2013-2015.

METHOD

Research design used in this study is analytic observational with case control, a study that studied the risk factors with retrospective approach, meaning that research began by identifying the groups affected by the disease or certain securities (cases) and a group without effect (control), then identify the risk factors in the past, so as to explain why the cases affected, while the controls are not affected: This study was conducted in Katingan for 7 months from February to August, 2016. This study population consisted of case and control populations. The population consisted of all cases of families who experienced the mortality of a mother in Katingan years 2013-2015 were recorded in maternal mortality data in Katingan District Health Office. Sample groups of cases in this study is the family / mother / midwife / person who knows the journey of maternal mortality. Overall number of samples is 64 samples. The instrument used in this study is documentation of verbal autopsy, KMS pregnant women, register cohort of pregnant women as well as data collected using a questionnaire tools.

RESULTS AND DISCUSSION

A. Univariate Analysis

Table 1. The frequency distribution of nutritional status, anemia, birth attendance, and delayed of reference to maternal mortality

<table>
<thead>
<tr>
<th>Variable</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>Nutritional Status</td>
<td>Good</td>
<td>28</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>Not good</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Anemia</td>
<td>Not good</td>
<td>28</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>Anemia</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Birth attendants</td>
<td>Health worker</td>
<td>26</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>TBAs</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Delayed in Reference</td>
<td>Not delayed</td>
<td>6</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>Delayed</td>
<td>26</td>
<td>0</td>
</tr>
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</table>
Above table shows that the frequency distribution of nutritional status in the case group who experienced nutritional status is not good 4 (12.5%) of respondents. Previous research found that cultural factors and traditions still play a role in the process of postnatal care through family influences that play a role in the treatment of post-partum. Most of these practices is the prohibition or compulsion to take certain foods. At the time of parturition, the mother only eat white rice without animal protein and limit the consumption of water because they can slow down the process of wound healing. It can reduce postpartum maternal conditions that require sufficient nutrition to restore the body and helps breastfeeding.8,9.

Mothers who are anemic in the case group 4 (12.5%) of respondents. According to data released by UNPF (United Nations Population Fund), WHO (World Health Organization), UNICEF (United Nations Children’s Fund) and the World Bank show that one woman dies every minute due to pregnancy problems. Previous research has found that anemia due to iron deficiency is a major cause of anemia in pregnant women compared with a deficiency of other nutrients. According to the WHO, approximately 80% of maternal mortality is a direct result of direct complications during pregnancy, childbirth and post-partum period and 20% of maternal mortality occur due to indirect causes.

Mothers who use birth helper is TBAs in case group 6 (18.7%) of respondents. Almost all of Indonesia is still a lot of births attended by TBAs. Both in rural and urban areas, including the type of informal leaders shamans because they typically have the power and authority that is respected by the people around him. Its authority, especially the authority. Theoretically, the authority can be distinguished on traditional authority, the authority of rational and charismatic authority 10. Shamans are considered as a person who has authority charismatic (Adhimiharja, 2005), a special ability or authority that there is in him. Authority was held without studied, but exists by itself and is a gift from God 10.

Moreover, from several studies of TBAs had done turned out the role of TBAs are not just limited to the aid delivery, but also includes a variety of other ways, such as wash clothes after the mother gave birth, baby bathing during the umbilical cord has not been crowbar (off), massaging the mother after gave birth to her, bathe her mother, washing the hair of women after 40 days of delivery, do alms ceremony to nature supra-natural, and can give peace to the patient for any actions connected with nature supra-natural according to people’s beliefs will affect human lives 10.

Mothers who delayed referral in case group were 26 (81.2%) of respondents. Families dominate in the decision to refer the mother to the health service. This shows that mothers or women lack the power in the decision-Observers in the family although associated with problems concerning the safety of his soul. Efforts decision to refer the mother to a hospital is often influenced by the culture developed in the community to negotiate. In addition, cost constraints are also a reason for the delay in decision-making. This constraint is often the cause delays in reference to mothers from poor families so that families do not dare bring mom to the hospital. Families often assume if treated at the hospital will cost a lot, especially as in the case of pregnancy or childbirth complications. Delay in making the decision to refer the mother to a referral hospital also occur due to ignorance of the danger signs should immediately get treatment 11.

### B. Analysis Bivariat

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<tr>
<th>Variable</th>
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<th>Description</th>
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<tr>
<td>Nutritional Status</td>
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<tr>
<td>Anemia</td>
<td>0.113</td>
<td>Unrelated</td>
</tr>
<tr>
<td>Birth attendants</td>
<td>0.024</td>
<td>Unrelated</td>
</tr>
<tr>
<td>Delayed in reference</td>
<td>0.0001</td>
<td>Related</td>
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The table above shows that nutritional status has no significant relationship between maternal mortality (p-value = 0.113). This is in line with research Aeni N (2013) which states that the nutritional status had no connection with the mortality of the mother 12. In this study also showed that anemia has no significant relationship between maternal mortality (p-value = 0.113). This is in line with research Aeni N (2013) which states that anemia not related to maternal mortality. Anemia can be identified and prevented by measuring hemoglobin levels when maternal antenatal. So if the routine antenatal mother, then the mother’s risk of experiencing complications will be reduced 13.

In this study also showed that birth attendants have no significant relationship with the maternal mortality (p-value = 0.024). In a study conducted by Fibriana AI...
(2007) also found that birth attendants have no significant relationship with the mother’s mortality. Personnel trained birth attendant is one of the most important techniques in reducing maternal mortality in countries that have successfully lowered maternal mortality rates in the country. Although evidence has shown that the handling of labor by doctors, midwives and nurses is an important factor in reducing the maternal mortality rate, only 58% of all births attended by trained personnel. In those developing countries, only 53% of women give birth with the help of health professionals (midwives or doctors) and only 40% who give birth in hospitals or health centers, and an estimated 15% of pregnant women will experience life-threatening complications, which require service immediately. There are many factors that underlie these circumstances, among others, is the lack of trained personnel and lack distribution the personnel in these countries. This study is also consistent with research Aeni N (2013) which states that birth attendants do not have a relationship with the mother’s mortality.

Delay references have meaningful relationships with maternal mortality (p-value = 0.0001). The results of the study according to research conducted by Ika Arulita Fibriana and Mahalul Azam (2010) showed that the variables related to maternal mortality in Cilacap are first delay (p <0.001). The cause of the highest maternal mortality due to bleeding caused by delays in treatment and referral. In addition, the delay factor of decision making in the family are also factors that prove fatal to the mother in labor. Apart from the delay in the decision-making factors, geographic factors and economic constraints, delays in seeking help also caused by the existence of a conviction and resignation of the public that everything that happens is an inevitable destiny. Even in the choice of the place of delivery is correct, not uncommon occurrence of maternal mortality also occur in health facilities. This is because the delay in referring women giving birth mothers to health facilities. In addition to delays referral maternal family would think of a number and / costs to be incurred by the maternal family, of course, everyone knows that the tariffs of service and care in health facilities are not cheap.

CONCLUSION

The results showed that the nutritional status, anemia status, and birth attendants have no significant relationship with maternal mortality, with a p-value respectively as follows 0.113, 0.113 and 0.024. However, delays in referrals has a significant association with maternal mortality with p-value = 0.0001. The advice can be given based on this research is Katingan need to be done early detection of risk factors and potential, especially obstetric complications of pregnancy and childbirth in order to do prevention optimally. Necessary to improve the quality of antenatal and post-natal care including by improving the quality of health workers with technical skills training and non-technical midwifery who served in the village. Furthermore, the support of family, especially her husband, parents or other family members who live with pregnant women in overseeing risk factors through the provision of information and knowledge about the risks of pregnancy danger signs so that when there are complications could be identified and receive immediate treatment.

**Ethical Clearance:** This study approved and received ethical clearance from the Committee of Public Health Research Ethics of Medical Faculty, LambungMangkurat University, Indonesia. In this study we followed the guidelines from the Committee of Public Health Committee of Public Health Research Ethics of Medical Faculty, LambungMangkurat University, Indonesia for ethical clearance and informed consent. The informed consent included the research title, purpose, participants’s right, confidentiality and signature.

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**Conflict of Interest:** The authors declare that they have no conflict interest.

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