

FACTORS ASSOCIATED WITH THE INCIDENCE OF UNDERWEIGHT IN TODDLERS

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ABSTRAK : FAKTOR FAKTOR YANG BERHUBUNGAN DENGAN KEJADIAN GIZI KURANG PADA BALITA

Latar Belakang : Gizi Kurang adalah salah satu masalah kesehatan masyarakat yang utama pada Balita. Gizi Kurang adalah Berat Badan yang Kurang dengan hasil pengukuran berdasarkan indeks berat badan menurut umur (BB/U) antara -3 SD s/d <-2 SD. Desa Sukaresmi merupakan salah satu desa binaan Puskesmas Cisaat Kabupaten Sukabumi. Dari hasil data bulan penimbangan Balita di bulan Juni 2024, Gizi kurang di Desa Sukaresmi terdapat 15,2 % sebanyak 167 Balita dari 1096 Balita yang diukur.

Tujuan Penelitian : Mengetahui faktor -faktor yang berhubungan dengan kejadian Gizi Kurang pada Balita di Desa Sukaresmi Kecamatan Cisaat Kabupaten Sukabumi. Waktu pelaksanaan penelitian dimulai pada bulan Juni 2024.

Metode : pendekatan Cross sectional. Populasi dalam penelitian ini berjumlah 167 Balita (total sampling). Data dikumpulkan dengan menggunakan data primer. Data Kemudian dianalisa menggunakan *Chi Square dan Fisher's exact* dengan nilai signifikansi $p \leq 0,05$.

Hasil : Hasil uji statistik menunjukkan ada hubungan kejadian gizi kurang dengan penyakit infeksi ($p=0,001$), Riwayat Imunisasi ($p=0,015$), Jumlah paritas ($P=0,044$), Pekerjaan ($p=0,19$), Pendapatan ($p=0,046$) dengan Gizi Kurang, tidak ada hubungan bermakna antara Riwayat ASI Eksklusif ($p=1,000$) Jenis kelamin ($p=0,368$) Pendidikan ($p=1,000$) dengan kejadian gizi kurang.

Kesimpulan: faktor penyakit infeksi, riwayat imunisasi, jumlah paritas, pekerjaan dan pendapatan berhubungan dengan kejadian Gizi Kurang di Desa Sukaresmi Kecamatan Cisaat Kabupaten Sukabumi.

Saran : Bila di temukan Balita dengan Gizi kurang kita harus segera berikan edukasi kepada orangtua bayi agar mencegah penurunan berat badan yang berkelanjutan yang pada akhirnya menyebabkan Stunting.

Kata Kunci : Asi Eksklusif, Chisquare, Gizi Kurang

ABSTRACT

Background : Underweight is under nutrition with the results of measurements based on the weight-for-age index (BB/U) between -3 SD to <-2 SD. Sukaresmi Village is one of the villages under the supervision of the Cisaat Health Center, Sukabumi Regency. Underweight in Sukaresmi Village there were 15,2 % as many as 167 toddlers from the measured 1096 toddlers (June 2024)

Purpose : determine the factors associated with the incidence of Underweight in toddlers in Sukaresmi Village,.

Methods : used a cross sectional approach. The population in this study amounted to 167 toddlers. Data were collected using primary data. Data were then analyzed using Chi Square and Fisher's exact with a significance value of $p \leq 0.05$.

Results The results of statistical tests showed that there was a relationship between the incidence of Underweight with infectious diseases ($p=0.001$), Immunization History ($p=0,015$), Number of children ($p=0,044$), Employment ($p=0,019$), Income ($p=0,046$) with Underweight, there was no significant relationship between Exclusive Breastfeeding History ($p=1,000$) Gender ($p=0,368$) Education ($p=1,000$) with the incidence of Underweight

Conclusion: infectious disease, immunization history, parity, employment and income were associated with the incidence of Underweight in Sukaresmi Village

Suggestions : If we find a toddler with Underweight, we must immediately provide education to the baby's parents to prevent continuous weight loss which ultimately causes stunting.

Keywords: Breastfeeding, Chi square, income, infectious disease, number of children, underweight

INTRODUCTION

Indonesia is expected to enter the Demographic Bonus era in 2045. Demographic Bonus is a condition where the productive age population is more than the unproductive age. The government and health workers in Indonesia are trying to maximize child health in order to welcome the Demographic Bonus that Indonesia will experience. If the quality of human resources of Indonesia's productive population increases in 2045, then high and inclusive economic growth will increase the number of middle income classes to around 70% in 2045. The success of achieving the vision of a Golden Indonesia 2045 depends on the ability of the Indonesian people to shape the Demographic Bonus into quality human resources. (Iswatiningsih, 2023)

Indonesia is still facing various health problems, ranging from infectious diseases, non-communicable diseases and of particular concern is the problem of nutrition in children. These problems can threaten Indonesia in maximizing the Demographic Bonus or better known as the Golden Generation 2045 that has been launched. The government of Indonesia, which is striving to be more advanced, still cannot escape the problem of malnutrition, such as stunting, wasting, and underweight (AnalisaDaily, 2023)

One of the nutrition problems in Indonesia related to growth in Toddlers is the problem of underweight. Toddlerhood is an important period in the process of human growth and development. The development and growth at that time determines the success of the growth and development of children in the next period, which is why it is often called the golden age. The food consumed by children under five determines their future growth and development. Inadequate nutritional intake over a long period of time will cause toddlers to experience malnutrition (Underweight). (Lette, Wungouw and Woda, 2019) Underweight is a condition when the weight of a toddler is not in accordance with the age it should be. (Siahaya et al., 2021) Underweight occurs because there is no weight gain as the toddler gets older (Weight Faltering). If Underweight is not taken seriously, it will lead to wasting. These three conditions if prolonged will become stunting. (Rokom, 2024)

According to the Ministry of Health of the Republic of Indonesia, toddlers are said to Underweight if the measurement results based on the weight-for-age index (BB/U) are between -3 SD to <-2 SD and Severely Underweight measurement result base on the weight-for-age index (BB/U) are <-3 SD (PermenkesRI, 2020) The prevalence of

underweight toddlers in the world based on data from the World Health Organization (WHO) in 2022 was 12.3% or 81.7 million toddlers and the highest prevalence of Underweight is in the Asian continent and the African Continent. The prevalence of underweight children in the Southeast Asia region is 23.6% or 39.1 million children. (WHO, 2020) Based on the results of the Indonesian Health Survey in 2023, it reveals that there are still many toddlers with nutritional status problems. In Indonesia, 12.9% of toddlers are underweight, the prevalence of stunting is 15.8%, wasting is 6.4% and 4.2% are overweight (SKI, 2023)

The prevalence of underweight in Indonesia is highest in the province of East Nusa Tenggara at 22.9%,

Southeast Sulawesi at 18.6%, West Sulawesi at 18.5%, Central Sulawesi at 18.5% and Maluku at 18.4%. In West Java province, the prevalence of underweight was 14.7% and Sukabumi district ranked 4th in the highest incidence of underweight out of 27 cities in West Java at 17.9%, with the highest prevalence of underweight in Cirebon at 20.2% and the lowest in Cianjur at 7%. (SKI, 2023) Nutrition is still a health challenge faced by communities in West Java. Data from the Sukabumi District Health Office in 2022 noted that there were 9040 underweight children out of 193,944 measured children. (Profil Kesehatan Kab Sukabumi, 2022)

Underweight that occurs in toddlers causes disruption of growth and development, both in terms of physical, psychomotor, and mental. Serious malnutrition in toddlers can cause death. (Widyanata, Arief and Kurnia, 2020) Toddlers experiencing malnutrition will affect the decrease in children's resistance, making them susceptible to infectious diseases. (Puspitasari and Romi, 2022) In addition, the condition of malnourished babies can result in stunted growth, disruption of the baby's immune system making it vulnerable to infectious diseases, inhibition of optimal brain growth, changes in child behavior such as restlessness, crying easily and having an effect on apathetic behavior that lasts a long time. (Mutika and Syamsul, 2018) Malnutrition in children under five can affect children's intelligence, decreased child productivity and low cognitive abilities. (Sumardi, Aswadi and Masniar, 2019)

According to the United National Children's Fund (UNICEF) in 2013, the causes of undernutrition in children under five consist of direct causes, namely food intake and infectious diseases suffered by children under five. Furthermore, indirect causes are food availability at home, poor parenting, poor sanitation, and inadequate health services.

Meanwhile, the main causes of undernutrition are poverty, lack of education, and lack of skills. The root cause of nutrition problems is the economic crisis. (Sihombing, Siagian and Fitri Ardiani, 2013)

Food consumption factors are a direct cause of nutritional problems in toddlers, because food consumption that does not meet the requirements of balanced nutrition, namely diverse, as needed, clean and safe, will have a direct impact on the growth and development of toddlers. (Oktavia, Widajanti and Aruben, 2017) Infectious disease factors can be related to nutritional disorders in several ways, namely affecting appetite and can cause loss of food due to vomiting / diarrhea, where the nutrients in the food consumed are insufficient or do not meet the body's needs, so that the immune system will decrease and easily suffer from infectious diseases that cause malnutrition in toddlers. (Sihombing, Siagian and Fitri Ardiani, 2013) factors that influence nutritional problems in toddlers are caused by factors of energy adequacy, protein adequacy, maternal education, maternal knowledge, family income, and maternal parenting. (Dede, Manongga and Romeo, 2023)

Sukabumi Regency has 58 health centers, one of which is the Cisaat Health Center. The UPTD Puskesmas, Cisaat area covers 6 villages namely Cisaat village, Sukamanah village, Cibatuh village, Sukasari village, Nagrak village and Sukaresmi village. Preliminary studies that have been conducted at the Cisaat Health Center the latest data in April 2024 show that the Cisaat Health Center has 326 cases of underweight with a prevalence of 14.1% and Sukaresmi village has the highest incidence of underweight, namely 97 cases of underweight toddlers and 15 cases of severely underweight toddlers out of 818 toddlers measured in April in Sukaresmi village. The efforts to prevent underweight that have been carried out at the Cisaat

Health Center include monitoring the growth of toddlers through posyandu activities, providing additional food, and providing blood supplement tablets to adolescent girls and pregnant women.

Sukabumi District has a high prevalence rate and is in the top 5 highest incidence rates in West Java. In Sukaresmi Village, the prevalence of malnourished toddlers is 15.2%, which is greater than the prevalence of malnutrition in Indonesia, which is 12.9%. This problem, especially the incidence of malnutrition, needs special attention and challenges us to improve it immediately. On the basis of this, a joint effort is needed to improve the nutritional status of children under five in Indonesia, especially in Sukaresmi Village, Sukabumi Regency. From the background that has been described above, the researcher is interested in seeing what factors are related to the incidence of underweight in toddlers in Sukaresmi Village, Cisaat District, Sukabumi Regency.

RESEARCH METHODS

This type of research design uses a cross sectional design, the sample of this study is total sampling, namely all toddlers who are underweight and severely underweight in June 2024 in Sukaresmi Village, namely 167 toddlers. Data analysis is done by collecting primary data. Primary data is taken from direct data collection of researchers to mothers with underweight and severely underweight toddlers to fill out patient biodata forms. Analysis of this research data using univariate and bivariate analysis. univariate analysis to obtain research results displayed in the frequency distribution table. For bivariate analysis researchers use Chi Square and Fisher Exact tests to see the relationship between independent and dependent variables. The study has obtained Ethical feasibility from KEPK Stikes Dharma Husada with no 199 / KEPK / SDHB / B / IX / 2024.

RESEARCH RESULTS

Tabel 1
Frequency Distribution of Mother and Toddler Characteristics

Variable	N	%
Underweight	142	85
Severely Underweight	25	15
Toddler Age		
Age < 6 Months	17	10,2
Age 7-35 Months	87	52,1
Age 36-59 Months	63	37,7
Infectious Disease		
Overtime (>4 times)	34	21,6
Rarely (1-3 times)	97	58,1
Never	36	20,4

Immunization History		
Complete	81	48,5
Incomplete	86	51,5
Breastfeeding History		
Eksklusif Breastfeeding History	121	72,5
Non Eksklusif Breastfeeding	46	27,5
Gender		
Female	84	50,3
Male	83	49,7
Parity		
Primiparaous	44	26,3
Multiparaous	123	73,7
Education		
Low Education(Elementary School, Junior High School)	109	65,3
Secondary Education (High school))	54	32,3
Higher Education (Diploma, Bachelor Degree)	4	2,4
Occupation		
Work	12	7,2
Not Work	155	92,8
Income		
< Minimum Wage	132	79
> Minimum Wage	35	21

Source: Primary Data June 2024

It is known that of the 167 toddlers who were sampled in Sukaresmi Village, Cisaat Subdistrict, Sukaresmi Regency, there were 142 toddlers (85%) who experienced underweight and 25 toddlers (15%) who experienced severely underweight. Based on age, it is known that the number of toddlers with age less than 6 months there are 17 toddlers (10.2%), age 7-35 months there are 87 toddlers (52.1%) and age 36-59 months there are toddlers (37.7%). The number of toddlers who experienced a history of infectious diseases such as ARI, and diarrhea with a frequency of more than 4 times in the last 3 months there were 34 toddlers (21.6%), a rare category (1-3 times) there were 97 toddlers (58.1%) and a category never in the last 3 months 36 toddlers (20.4%). There were 81 toddlers with complete immunization (48.5%) and 86 toddlers with incomplete immunization (51.5%). There were 121 toddlers with

exclusive breastfeeding (72.5%) and 46 toddlers without exclusive breastfeeding (27.5%). Based on gender category, there were 84 female toddlers (50.3%) and 83 male toddlers (49.7%). The primiparous category had 44 respondents (26.3%) and multiparous 123 respondents (73.7%). The mother's education obtained the results that the low education level was 109 respondents (65.3%), the middle category was 54 respondents (32.3%) and the high education level was 4 respondents (2.4%) and it was known that mothers of underweight toddlers who worked were 12 respondents (7.2%) and those who did not work were 155 respondents (92.8%). Family income obtained results, namely income less than the minimum wage there are 132 respondents (79%) and more than the minimum wage there are 35 respondents (21%).

Tabel 2
Frequency Association of Maternal and Toddler Characteristics With the Incidence of Underweight

Variable	Underweight		Severely Underweight		Total		P value
	N	%	N	%	N	%	
Infectious Disease							
Overtime (>4 times)	34	94,4	2	5,6	36	100	0,001
Rarely (1-3 times)	92	94,8	5	5,2	97		
Never	16	47,1	18	52,9	34		
Immunization History							

Complete	75	92,6	6	7,4	81	100	0,015
Incomplete	67	77,9	19	22,1	86		
Breastfeeding History							
Eksklusif Breastfeeding History	103	85,1	18	14,9	121	100	1,000
Non Eksklusif Breastfeeding	39	84,8	7	15,2	46		
Gender							
Female	74	88,1	10	11,9	84	100	
Male	68	81,9	15	18,1	83		0,368
Parity							
Primiparaous	42	95,5	2	4,5	44	100	
Multiparaous	100	81,3	23	18,7	123		0,044
Education							
Low Education(Elementary School, Junior High School)	91	83,	18	16,	109	100	
Secondary Education (High school))	47	87	7	13	54		1,000
Higher Education (Diploma, Bachelor Degree)	4	100	0	0	4		
occupation							
Not Work	135	87,1	20	12,9	155	100	0,019
Work	7	58,3	5	41,7	12		
Income							
> Minimum Wage	34	97,1	1	2,9	35	100	0,046
< Minimum Wage	108	81,8	24	18,2	132		

Source: Primary Data June 2024

Based on the results of the study, it is known that respondents who have never been sick were 36 respondents out of 36 respondents, the underweight category was 34 respondents 94.4 (%) and the severely underweight category was 2 respondents (5.6%) Meanwhile, respondents with a category that rarely experienced infectious diseases (1-3 times) in 3 months were 97 respondents out of 97 respondents, the underweight category was 92 respondents (94.8%) and the severely underweight category was 5 respondents (5.2%). Respondents who often experienced infectious diseases (≥ 4 times) were sick as many as 34 respondents out of 34 respondents, the category of underweight was 16 respondents (47.1%) and the category of severely underweight was 18 respondents (52.9%) Based on the results of the Chi-square statistical test, the p-value is 0.001 ($p < 0.05$) which means that there is a relationship between infectious diseases and the incidence of underweight in Sukaresmi Village, Cisaat District, Sukabumi Regency.

There were 81 respondents with complete immunization, 75 respondents (92.6%) were underweight and 6 respondents (7.4%) were severely underweight. Meanwhile, there were 86 respondents with incomplete immunization, 67 respondents (77.9%) were underweight and 19 respondents (22.1%) were severely underweight. Based on the Chi-square statistical test results, the p-value is 0.015, which means that there is a

relationship between immunization status and the incidence of underweight in Sukaresmi Village, Cisaat District, Sukabumi Regency.

There were 121 respondents out of 121 respondents, 103 respondents (85.1%) were underweight and 18 respondents (14.9%) were severely underweight, while 46 respondents out of 46 respondents were underweight, 39 respondents (84.8%) and 7 respondents (15.2%) were severely underweight. Based on the Chi-square statistical test results, the p-value is 1.000 ($P > 0.05$) which means there is no relationship between breastfeeding history and the incidence of underweight in Sukaresmi village, Cisaat sub-district, Sukabumi district.

There were 84 respondents with female gender out of 84 respondents, the underweight category was 74 respondents (88.1%) and the underweight category was 10 respondents (11.9%) Meanwhile, there were 83 respondents with male gender out of 83 respondents, the underweight category was 68 respondents (81.9%) and the underweight category was 15 respondents (18.1%). Based on the Chi-square statistical test results, the p-value is 0.368 (> 0.05) which means that there is no relationship between Immunization History and the incidence of underweight in Sukaresmi Village, Cisaat District, Sukabumi Regency.

Based on the results of the study, it is known that respondents with Primipara mothers as many as

44 respondents out of 44 respondents, the category of underweight is 42 respondents (95.5%) and the severely underweight category is 2 respondents (4.5%) While respondents with a history of Multipara there are 123 respondents out of 123 respondents the category of underweight is 100 respondents (81.3%) and the category severely underweight is 23 respondents (18.7%). Based on the Chi-square statistical test results obtained p-value 0.044 (<0.05) which means there is a relationship between Parity with the incidence of underweight in Sukaresmi village, Cisaat sub-district, Sukabumi district.

Of the 109 respondents with low education, 91 respondents (92.7%) were underweight and 18 respondents (16.3%) were severely underweight. Of the 54 respondents with secondary education, 47 respondents (87%) were underweight and 7 respondents (13%) were severely underweight. Meanwhile, respondents with a higher education level were 4 respondents out of 4 respondents, the underweight category was 4 respondents (100%) and severely underweight was not highly educated. The statistical test used was Fisher Exact because there was an expected value smaller than 5 and obtained a p value of 1.000 (>0.05) which means that there is no relationship between education level and the incidence of underweight in Sukaresmi Village, Cisaat District, Sukabumi Regency.

Respondents with working mothers as many as 12 respondents of the 12 respondents, the underweight category was 7 respondents (58.3%) and the severely underweight category was 5 respondents (41.7%) Meanwhile, respondents with no work were 155 respondents of the 155 respondents in the underweight category as many as 135 respondents (87.1%) and the severely underweight category as many as 20 respondents (12.9%). The statistical test used is Fisher Exact because there is an expected value smaller than 5 and obtained a p value of 0.019 (<0.05) which means there is a relationship between work and the incidence of underweight in Sukaresmi Village, Cisaat District, Sukabumi Regency.

Respondents with family income more than the minimum wage were 35 respondents out of 35 respondents, 34 respondents (97.1%) were underweight and 1 respondent (2.9%) was severely underweight. Meanwhile, respondents who did not work were 132 respondents out of 132 respondents, 108 respondents (81.8%) were underweight and 24 respondents (18.2%) were severely underweight. Based on the results of the Chi-Square statistical test obtained a p-value of 0.046 (<0.05) which means that there is a relationship between income and the

incidence of underweight in Sukaresmi Village, Cisaat District, Sukabumi Regency.

The results of the bivariate study showed that there was no relationship between breastfeeding history and the incidence of underweight in Sukaresmi village, Cisaat subdistrict, Sukabumi district. Pvalue > 0.05 ($p = 1.000$) The results of this study are in line with the research of Jasmiaty (2017) who examined the relationship between exclusive breastfeeding and underweight in infants aged 6-12 months in the work area of the Kolongan health center, Kalawat sub-district, North Minahasa Regency which shows that the p value = 0.542 so that p is greater than α (0.05), (2017) Based on the results of field research, it shows that there are most mothers who provide exclusive breastfeeding whose nutritional status is very poor, from the assumption of researchers, the exclusive breastfeeding history factor does not have a big effect on the incidence of underweight because after 6 months breast milk cannot meet all the nutritional needs of toddlers. Meanwhile, based on the data I obtained in Sukaresmi village, the number of infants aged less than 6 months is only about 10% of the total infants with underweight, namely only 17 toddlers under 6 months of 167 toddlers with underweight. Therefore, the more dominant factor is the nutritional intake of complementary foods given after 6 months. If complementary foods are not given appropriately, children can become malnourished despite having a good history of exclusive breastfeeding.

The statistical test results show that there is no relationship between gender and the incidence of underweight in Sukaresmi Village, p value > 0.05 ($P=0.368$). This is in line with research conducted by Erlita (2020) with the title Factors associated with the nutritional status of children aged 0-23 months based on the Composite Index of Anthropometric Failure (CIAF) in the Karangayu Health Center working area of Semarang City p value = 0.997. (Andini et al., 2020) In the opinion of the researcher this is due to the absence of differences in the value views of families towards the assessment of a boy and a girl in this area, so that family treatment in terms of parenting, feeding, for boys and girls is the same. One of the most dominant factors causing underweight is the provision of proper nutrition, where babies will experience a disturbance in their growth if the nutrients given to them are lacking regardless of gender.

Based on the results of statistical tests obtained a p-value of 1.000 (>0.05) which means that there is no relationship between the level of education and the incidence of underweight in Sukaresmi village, Cisaat sub-district, Sukabumi

district. These results are in line with research conducted by Filia (2018) with the title The relationship between education and the nutritional status of children in the foster family of FK Muhammadiyah University with a p value of 0.200. Underweight obtained may be influenced by a lack of parental knowledge and the influence of other factors such as family economy, food intake or infectious diseases that may be experienced by children (Lubis and Boy, 2021). This is in line with previous research which states in the chisquare test that the p value = 0.632. In this study, mothers who had a low level of education did not always have children with more nutritional problems than mothers with a higher level of education. (Ni'mah and Muniroh, 2016). According to the researcher's assumption, we are currently experiencing educational disruption, which means that this disruption era causes major changes due to the development of digital technology. The freedom to access the internet as a medium of information anywhere and anytime results in mothers who have low levels of education can have the same knowledge as mothers with high levels of education. The ever-evolving information technology allows parents, regardless of their level of education, to access information about child nutrition easily so that education level is no longer the main factor affecting the nutritional status of toddlers. The results of bivariate research indicate that there is a relationship between infectious diseases and the incidence of underweight in Sukaresmi Village. This is in line with research conducted by Kadek (2015) with the title Risk Factors for Underweight and Underweight in Toddlers in Southwest Sumba Regency, East Nusa Tenggara with the results of p value = 0.001. (Ariesthi, Adhi and Wirawan, 2015) In this study, researchers found that children under five tend to experience complaints of illness during the last three months, namely cough, heat, and runny nose. Sickness experienced by children under five is caused by foreign objects from outside (viruses and bacteria) that enter against the body and weather changes that interfere with the body's immunity. This disease has an impact on the growth process of children under five. This can be explained when children under five experience infectious diseases, nutritional intake is more focused on the recovery process so that nutrients for the growth process are not enough and children experience underweight. Some previous studies have found that children who experience infections can interfere with their growth process. As research conducted by Maulidah et al, (2019) states that children affected by infection can reduce appetite, lose micronutrients, and disrupt nutrient transportation. Infections can also attack the

immune system and disrupt metabolism which creates hormonal imbalances. This is explained when children experience repeated infections, nutritional intake will be used to fight the disease. So that if the incoming intake is not as needed this can cause children to experience underweight. (Maulidah, Rohmawati and Sulistiyan, 2019) Based on the assumptions of researchers, infectious diseases are strongly associated with the incidence of underweight because infectious diseases such as diarrhea, ARI, and worms can reduce nutrient intake due to decreased appetite and impaired absorption of nutrients. In addition, infectious diseases can also interfere with the body's metabolism which can cause hormonal imbalances and impaired immune function.

Based on bivariate analysis, it shows that there is a relationship between immunization and the incidence of Underweight p value <0.05 (p value = 0.015). The results of this study are in line with the research of Siti Nurhasiyah (2020) with the results of the chi square statistical test p value = 0.004 (Jamil and Subiyatin, 2020). Immunization is a way to provide immunity to a person actively against infectious diseases and an antigen, so that if in the future he is exposed to a similar antigen, the disease never occurs. The purpose of immunization is to reduce morbidity, disability and death from diseases that can be prevented by immunization. Immunization can provide an immune effect on humans, needed especially at an early age which is an age vulnerable to disease. The results of another study conducted by Elisabeth (2021) at the Oepoi Health Center in Kupang City where there is a significant relationship between the completeness of immunization and nutritional status in toddlers. (Cono, Nahak and Gatum, 2021) Based on the assumptions of researchers, immunization history is strongly associated with the incidence of underweight because incomplete immunization status can reduce the risk of children developing infections which ultimately affect the nutritional status of toddlers. Based on the results of statistical tests, it shows that there is a relationship between the number of parity with the incidence of underweight in Sukaresmi Village with a p-value of 0.044 (p-value <0.05). The results of this study are in line with research conducted by Devid (2023) with the results of the chi square statistical test p value = 0.009. (Issadikin, 2023) Based on the assumptions of researchers, the number of children is related to the incidence of underweight because mothers with primipara tend to focus more on paying attention to the health of their children than mothers with multipara. whereas if there are many children in the family, the mother's attention will be divided The

welfare of children who live in small families is relatively more secure than large families. Conversely, the more the number of family members, the fulfillment of the needs of family members tends to be more difficult, including in fulfilling the food and nutritional needs of the family. This is in line with research conducted by Teguh (2021) which shows that there is a significant relationship between the number of children and the incidence of underweight in the Cimahi Selatan working area. The availability of family food is influenced by the number of children in the family. The more family members in one house will affect the reduction in the portion of food for each family member. If this goes on for a long time, it will cause family members who are included in the under-five group to become more vulnerable to nutritional deficiencies.

Based on the results of bivariate analysis, it shows that there is a relationship between work and the incidence of underweight in Sukaresmi Village p -value 0.019 (p value <0.05). The results of this study are in line with research conducted by Herliana (2022) with the title Relationship of Parenting Pattern With Toddler Nutritional Status In Palla Public Health Center Southwest Sumba. This is because working women tend not to pay attention, let alone care for their toddlers. Although not all working mothers neglect their children, a busy workload schedule leads to a lack of maternal attention in terms of cooking food that suits the needs of their toddlers (Deliana Mada, Henny Talahatu and Magdalena Toy, 2021). This research is also in line with research conducted by Evin (2022) which found a value of $p = 0.006$ between the work of mothers of toddlers and the nutritional status of mothers of toddlers. In this case, it is argued that the mother's employment status affects the mother's parenting of her child (Prawesti, 2018). Based on the assumptions of researchers, maternal work is related to the incidence of underweight because working mothers must manage dual responsibilities as housekeepers and workers, so they may not have enough time to monitor and meet children's nutritional needs effectively.

Based on the results of statistical tests, it shows that there is a relationship between income and the incidence of underweight in Sukaresmi Village p -value 0.046 (p value <0.05). The results of this study are in line with research conducted by Yuliana (2023) with the title Factors affecting the incidence of underweight in children under five years of age in the work area of the Kanatang health center in East Sumba Regency. (Dede, Manongga and Romeo, 2023) Adequate family income will support the growth and development of children, because

parents can provide all the needs of children both primary and secondary. The effect of increasing income will have an impact on improving nutritional status. If income increases, the amount of food and type of food will tend to improve. This study is in line with research conducted by Ngoma, (2020) which states that there is a significant effect of family income on the incidence of underweight in toddlers with an OR value = 7.576, which means that respondents with low income have a 7.576 times greater risk of underweight compared to respondents who have high income (Dam, Imelda. F., Ndoen, I. Honey., & Hinga, 2021). Household income in this study is the total income per capita in one month by family members who have worked and lived in one house and carried out activities such as cooking and others. The results showed that households with low income had an influence on the quality and quantity of food consumed. Where, almost all households with low income were found to consume food that was not diverse, this is why underweight cases were found in households with low income. Conversely, high income supports the purchasing power of the food consumed. High household income is able to support the availability of diverse food with guaranteed quality and quantity. (Dam, Imelda. F., Ndoen, I. Honey., & Hinga, 2021) The results of this study are also supported by the results of research by Natalia and Evitasari, (2021) which state that low household income affects access to food both in quality and quantity. (Natalia and Evitasari, 2021). Based on the assumptions of researchers, the income factor is strongly related to the incidence of underweight because low income often results in limitations in buying nutritious food. Families with lower incomes tend to consume cheaper but less nutritious foods and have diets that are not balanced and also lack of maternal knowledge about balanced nutrition, even though we can get good nutrition without having to be expensive if the mother knows the information, and also with low income has an impact on having a less healthy living environment so that it worsens health conditions which indirectly worsens the nutritional status of children.

CONCLUSION

Based on the results of the research that has been described, the conclusion of the results of the research that the authors conducted is the factor of infectious diseases, immunization history factors, parity factors, employment factors and income associated with the incidence of underweight while those that are not associated with the incidence of underweight are exclusive breastfeeding history and gender

SUGGESTION

Suggestions from researchers are expected to actively participate in health counseling activities held by health workers to increase public knowledge and awareness. in addition, to routinely monitor growth and check the condition of children to health services, active participation of posyandu cadres, health counseling, development of malnutrition prevention programs and cooperation between health workers, posyandu cadres and community leaders.

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