



SURAT KETERANGAN

Nomor: 249/UNUSA/Adm-LPPM/IV/2019

Lembaga Penelitian dan Pengabdian Kepada Masyarakat (LPPM) Universitas Nahdlatul Ulama Surabaya menerangkan telah selesai melakukan pemeriksaan duplikasi dengan membandingkan artikel-artikel lain menggunakan perangkat lunak **Turnitin** pada tanggal 01 April 2019.

Judul : The Relationship of Socio-Economic and Genetic Factors With Toddler Stunting at Kenjeran Health Center Surabaya

Penulis : Dwi Ernawati, Puji Hastuti, Dhian Satya Rachmawati, Ari Susanti, Christina Yuliasuti, Merina Widyastuti, Mieke Izzatul Mahmudah

Identitas : Indian Journal of Public Health Research & Development, Vol. 9, No. 11, November 2018

No. Pemeriksaan : 2019.04.01.114

Dengan Hasil sebagai Berikut:

Tingkat Kesamaan diseluruh artikel (*Similarity Index*) yaitu 15%

Demikian surat keterangan ini dibuat untuk digunakan sebagaimana mestinya

Surabaya, 01 April 2019

Ketua LPPM,

UNUSA
LPPM

Dr. Istas Pratomo, S.T., M.T.

NPP. 16081074

Paper

by Dhian

Submission date: 01-Apr-2019 10:35AM (UTC+0700)

Submission ID: 1103464398

File name: at_Kenjeran_Public_Health_Center_Surabaya_-_Amelia_Pitaloka.pdf (1.02M)

Word count: 4870

Character count: 29149

ISSN-0976-0245 (Print) • ISSN-0976-5506 (Electronic)

Volume 9

Number 411 OctoberNovember-December2018 2017



Indian Journal of Public Health Research & Development

An International Journal



Website:

www.ijphrd.com

EXECUTIVE EDITOR

Prof Vidya Surwade

Associate Professor, Dr Baba Saheb Ambedkar Medical College & Hospital, Rohinee, Delhi

INTERNATIONAL EDITORIAL ADVISORY BOARD

1. **Dr. Abdul Rashid Khan B. Md Jagar Din** (Associate Professor)
Department of Public Health Medicine, Penang Medical College, Penang, Malaysia
2. **Dr. V Kumar** (Consulting Physician)
Mount View Hospital, Las Vegas, USA
3. **Basheer A. Al-Sum**
Botany and Microbiology Deptt. College of Science, King Saud University, Riyadh, Saudi Arabia
4. **Dr. Ch Vijay Kumar** (Associate Professor)
Public Health and Community Medicine, University of Buraimi, Oman
5. **Dr. VMC Ramaswamy** (Senior Lecturer)
Department of Pathology, International Medical University, Bukit Jalil, Kuala Lumpur
6. **Kartavya J. Vyas** (Clinical Researcher)
Department of Deployment Health Research, Naval Health Research Center, San Diego, CA (USA)
7. **Prof. PK Pokharel** (Community Medicine)
BP Koirala Institute of Health Sciences, Nepal

NATIONAL SCIENTIFIC COMMITTEE

1. **Dr. Anju Ade** (Associate Professor)
Kuvempu Medical College, Raichur, Karnataka
2. **E. Venkata Rao** (Associate Professor) Community Medicine
Institute of Medical Sciences & SUM Hospital, Bhubaneswar, Orissa
3. **Dr. Amit K. Singh** (Associate Professor) Community Medicine
VCSG Govt. Medical College, Srinagar – Garhwal, Uttarakhand
4. **Dr. R G Viveki** (Professor & Head) Community Medicine
Belgaum Institute of Medical Sciences, Belgaum, Karnataka
5. **Santosh Kumar Mulage** (Assistant Professor)
Anatomy, Raichur Institute of Medical Sciences Raichur (RIMS), Karnataka
6. **Gouri Ku. Padhy** (Associate Professor) Community and Family
Medicine, All India Institute of Medical Sciences, Raipur
7. **Ritu Goyal** (Associate Professor)
Anaesthesia, Saraswati Institute of Medical Sciences, Panchsheel Nagar
8. **Dr. Anand Kalaskar** (Associate Professor)
Microbiology, Prathima Institute of Medical Sciences, AP
9. **Md. Amirul Hassan** (Associate Professor)
Community Medicine, Government Medical College, Ambedkar Nagar, UP
10. **Dr. N. Girish** (Associate Professor) Microbiology, VIMS&RC, Bangalore
11. **BR Hungund** (Associate Professor) Pathology, JNMC, Belgaum.
12. **Dr. Sartaj Ahmad** (Assistant Professor),
Medical Sociology, Department of Community Medicine, Swami Vivekananda Subharti University, Meerut, Uttar Pradesh, India
13. **Dr Sumeeta Soni** (Associate Professor)
Microbiology Department, B.J. Medical College, Ahmedabad, Gujarat, India.

NATIONAL EDITORIAL ADVISORY BOARD

1. **Prof. Sushanta Kumar Mishra** (Community Medicine)
GSL Medical College – Rajahmundry, Karnataka
2. **Prof. D.K. Srivastava** (Medical Biochemistry)
Jamia Hamdard Medical College, New Delhi
3. **Prof. M Sriharibabu** (General Medicine) GSL Medical College, Rajahmundry,
Andhra Pradesh
4. **Prof. Pankaj Datta** (Principal & Prosthodontist)
Indraprastha Dental College, Ghaziabad

NATIONAL EDITORIAL ADVISORY BOARD

5. **Prof. Samarendra Mahapatro** (Pediatrician)
Hi-Tech Medical College, Bhubaneswar, Orissa
6. **Dr. Abhiruchi Galhotra** (Additional Professor) Community and
Family Medicine, All India Institute of Medical Sciences, Raipur
7. **Prof. Deepti Pruthvi** (Pathologist) SS Institute of Medical
Sciences & Research Center, Davangere, Karnataka
8. **Prof. G S Meena** (Director Professor)
Maulana Azad Medical College, New Delhi
9. **Prof. Pradeep Khanna** (Community Medicine)
Post Graduate Institute of Medical Sciences, Rohtak, Haryana
10. **Dr. Sunil Mehra** (Paediatrician & Executive Director)
MAMTA Health Institute of Mother & Child, New Delhi
11. **Dr. Shalendra Handu**, Associate Professor, Pharma, DM (Pharma,
PGI Chandigarh)
12. **Dr. A.C. Dhariwal**: Directorate of National Vector Borne Disease
Control Programme, Dte. DGHS, Ministry of Health Services, Govt.
of India, Delhi

Print-ISSN: 0976-0245-Electronic-ISSN: 0976-5506, Frequency: Quarterly
(Four issues per volume)

Indian Journal of Public Health Research & Development is a double blind peer reviewed international journal. It deals with all aspects of Public Health including Community Medicine, Public Health, Epidemiology, Occupational Health, Environmental Hazards, Clinical Research, and Public Health Laws and covers all medical specialties concerned with research and development for the masses. The journal strongly encourages reports of research carried out within Indian continent and South East Asia.

The journal has been assigned International Standards Serial Number (ISSN) and is indexed with Index Copernicus (Poland). It is also brought to notice that the journal is being covered by many international databases. The journal is covered by EBSCO (USA), Embase, EMCare & Scopus database. The journal is now part of DST, CSIR, and UGC consortia.

Website : www.ijphrd.com

All right reserved. The views and opinions expressed are of the authors and not of the Indian Journal of Public Health Research & Development. The journal does not guarantee directly or indirectly the quality or efficacy of any product or service featured in the advertisement in the journal, which are purely commercial.

Editor

Dr. R.K. Sharma
Institute of Medico-legal Publications
Logix Office Tower, Unit No. 1704, Logix City Centre Mall,
Sector- 32, Noida - 201 301 (Uttar Pradesh)

Printed, published and owned by

Dr. R.K. Sharma
Institute of Medico-legal Publications
Logix Office Tower, Unit No. 1704, Logix City Centre Mall,
Sector- 32, Noida - 201 301 (Uttar Pradesh)

Published at

Institute of Medico-legal Publications
Logix Office Tower, Unit No. 1704, Logix City Centre Mall,
Sector- 32, Noida - 201 301 (Uttar Pradesh)



Indian Journal of Public Health Research & Development

www.ijphrd.com

Contents

Volume 9, Number 11

November 2018

1. The Spread Area of Malaria Vector in Timor Island, East Nusa Tenggara Province 1
Muhammad Kazwaini, Chatarina U. Wahyuni, Monika Noshirma
2. Developing Community Resilience as a Supporting System in the Care of People with Mental Health Problems in Indonesia 6
Retno Lestari, Ah Yusuf
3. Effects of Knowledge of Vitamin D on Attitudes toward Sun Exposure among Middle-Aged and Elderly Indonesian Adults 11
Rivan Virlando Suryadinata, Bambang Wirjatmadi, Merryana Adriani, Sri Sumarmi
4. The Effects of Age And Body Mass Index on Blood Glucose, Blood Cholesterol, and Blood Pressure in Adult Women 16
Riza Fikriana, Shrimarti Rulanini Devy
5. The Antioxidant Activity and Organoleptic Properties of Soursoup Leaf Tea (*Annona Muricata L.*) and Moringa Leaf (*Moringa Oliefera L.*) in Combination with Guava Leaf (*Psidium Guajava*) 22
Roy J. Irawan, Trias Mahmudiono
6. Parent Communication Regarding Sexual and Reproductive Health of Adolescent: A Qualitative Systematic Review 27
Fransiska Imayike Fevriasanty, Oedojo Soedirham
7. Five Types of Personality and the Locus of Internal Control in relation to Preeclampsia Pregnancy 33
Lusiana Meinawati, Kusnanto Kusnanto, Oedojo Soedirham
8. The Effect of Diabetes Self-Management Education, Based on The Health Belief Model, on the Psychosocial Outcome of Type 2 Diabetic Patients in Indonesia 37
Rondhianto, Kusnanto, Soenarnatalina Melaniani
9. How does the Dayak Ngaju Community Treat Malaria? A Qualitative Study on the Use of Traditional Medicine in Central Kalimantan Province, Indonesia 43
Trilianty Lestarisa, Soedjajadi Keman
10. The Effect of Young Coconut Water against Morning Sickness among Women in the First Trimester of Pregnancy 48
Tri Ratna Ariestini, Whindu Purnomo
11. Factors Affecting the Incidence of Chronic Energy Deficiency among Pregnant Women Attending the Pulubala Community Health Centre 53
Zuriati Mohammad, Sri Sumarmi
12. Implementation of Birth Preparedness and Complication Readiness (BPCR) in High Risk Pregnancies 58
Ika Mardiyanti, Nursalam, Arief Wibowo

13. Access to Healthcare Facilities in Poor and Underdeveloped Areas in Nusa Tenggara Timur Province 64
Yendris Krisno Syamruth, H. Kuntoro
14. The Effect of Doctor Professionalism on the Quality of Medical Services at a First Level Health Facility 70
Febri Endra B. S., Stefanus Supriyanto, Rubiyat Indradi, Aditya Rizka R
15. Self-Help Group Therapy: The Enhancement of Self-Care Ability and Quality of Life Among the Elderly in Bali, Indonesia..... 76
I Wayan Suardana, Ah Yusuf, Windhu Purnomo
16. Healthy Nurses for a Quality Health Care Service: A Literature Review 81
Dodi Wijaya, Nyoman Anita Damayanti
17. The Support of the Family toward Children with Autism Spectrum Disorder..... 86
Siti Maemonah, Hamidah, Nyoman Anita Damayanti, Emung Mardiyana Hidayat, Aida Novitasari, Qorry Aina, Wina Tryas Fatima
18. Family Factors Associated with Quality of Life in Pulmonary Tuberculosis Patients in Surabaya, Indonesia 91
Dhian Satya Rachmawati, Nursalam, Arief Wibowo, Astrida Budiarti, Riza Agustin
19. Parenting Style Based on the Mother's Personal Mastery and the Mother-Child Attachment in Relation to Child Feeding Disorders: A Qualitative Study 96
Ni Putu Sudewi, Oedojo Soedirham, Ahmad Suryawan
20. Factors Associated with Onset to Hospital Delay among Stroke Patients in the Emergency Department 101
Abdulloh Machin, Muhammad Hamdan
21. Analysis of The Influence of Hersey-Blanchard Leadership and Nurse Maturity on Caring Behaviour Performance Based on Patient Perception..... 106
Minarni Wartiningsih, Stefanus Supriyanto, Sri Widati, Danoe Soesanto
22. The Relationship of Socio-Economic and Genetic Factors with Toddler Stunting at Kenjeran Public Health Center Surabaya 111
Dwi Ernawati, Puji Hastuti, Dhian Satya Rachmawati, Ari Susanti, Christina Yuliastuti, Merina Widyastuti, Mieke Izzatul Mahmudah
23. Cultural Religiosity as the Determinant Factor of a Successful Healthy City in South Kalimantan, Indonesia 116
Herawati, Shrimarti R. Devy
24. The Relationship between Response Time and Patient Survival with Emergency Treatment by the Code Blue Team..... 122
Al Afik
25. The influence of Nurse's Knowledge Level on Behaviour Changes, Attitude and 5 Moments of Hand Hygiene Compliance..... 127
Danoe Soesanto
26. The Role of Posyandu Cadres in Improving the Growth and Development of Toddlers in RW VII Puskesmas Mojo, Surabaya..... 132
Emung Mardiyana Hidayat, Rini Ambarwati Indriatie, Indriatie

27. Analysis of the Implementation of Pregnancy-related Health Care Services Through the Continuum of Care Approach in Puskesmas Bukittinggi City..... 137
Evi Hasnita, Armita Sri Azhari
28. Feeding Care Patterns of Mothers Working as Shellfish Peelers on Children's Nutritional Status at Integrated Health Posts in Coastal Areas.....142
Meiana Harfika, Zhakiyah Saraswati, Dya Sustrami, Lela Nurlela
29. The Relationship between Socioeconomic Status and Personality Type with Depression in Adolescents 147
Oktavianis, Rahmi Sari Kasoema
30. Consumption Patterns, Energy Adequacy, and The Nutritional Status of Softball Players..... 153
Ratna Candra Dewi, Bambang Wirjatmadi
31. Compliance with Smoke-Free Legislation and Associated Factors: A Serial Survey in Bali, Indonesia 159
Ketut Suarjana, Artawan Eka Putra, Putu Ayu Swandewi Astuti, Ketut Hari Mulyawan, Djazuly Chalidyanto
32. The association of Pre-Pregnancy Body Mass Index (BMI) and Increased Maternal Weight in the Third Trimester of Pregnancy with Foetal Weight Estimation..... 165
Siti Maimuna, Andina Firdaus Supriyanto
33. The Effectiveness of Bay Leaf Extract (*Syzygium Polyanthum*) in Inhibiting the Growth of *Candida Albicans*..... 70
Suratih, Dewa Ayu Ketut Surinati, Dewa Made Ruspawan
34. The Presenting Symptoms as a Predictor of the Hospital Arrival Time Intervals of Patients with Acute Coronary Syndrome..... 175
Tony Suharsono, Shynatry Ayu Andhika, Ahmad Hasyim Wibisono, Tina Handayani
35. Factors Influencing the Husband's Participation in Pregnancy Care in Surabaya City, Indonesia 180
Nurul Fitriyah, Windhu Purnomo, Noviasari Reksohadi
36. Exploration of the Daughters' Feelings Related to Accepting their Mother's Condition of Having Breast Cancer in East Java, Indonesia..... 185
Sirli Mardianna Trishinta, Retty Ratnawati, Septi Dewi Rachmawati
37. Mapping Customers: A Case Study of a University Hospital in Indonesia 190
Purwaningsih, Nyoman Anita Damayanti, Nasromudin, Thini Nurul Rochmah
38. Structural Model of the Factors Related to the Family Resilience of Stroke Patients in Indonesia194
Nikmatul Fadilah, Kusnanto, Nursalam, Minarti, Asnani
39. A Gender Analysis of Traditional Contraceptive Use in Sikka District, East Nusa Tenggara, Indonesia 200
Rut Rosina Riwu, Sarci Magdalena Toy, Daniela L. A. Boeky, Conrad L. H. Folamauk
40. The Relationship between Sexual Behavior and the Prevalence of HIV/AIDS among Homosexual Men in Bukittinggi City, Indonesia 206
Nurhayati, Wahyu Salendri
41. The Nutritional Status of Children Aged 1-3 Years Old Based on Food Processing Techniques in Surabaya 211
Qori'ila Saidah, Yudi Handoko, Nur Chabibah, Sri Anik Rustini, Nuh Huda, Dwi Priyantini, Dini Mei Widayanti
42. Mammary Gland in Supporting the Lactation Process: A Review 215
Thontowi Djauhari Nur Subchi, Merryana Andriani

The Relationship of Socio-Economic and Genetic Factors with Toddler Stunting at Kenjeran Public Health Center Surabaya

Dwi Ernawati¹, Puji Hastuti¹, Dhian Satya Rachmawati¹, Ari Susanti¹, Christina Yuliasuti¹, Merina Widyastuti¹, Mieke Izzatul Mahmudah¹

¹*School of Health Sciences Hang Tuah, Surabaya, Indonesia; Jl. Gadung No.1, Surabaya, Indonesia*

Abstract

Introduction: Stunting is a chronic nutritional problem arising from a malnourished condition that accumulates over a long period of time with a z-score of less than -2 SD. The incidence rate of stunting in Indonesia year to year has increased. The purpose of this study was to analyse the correlation of socioeconomic and genetic factors with the incidence rate of toddlers stunting.

Method: This research used a cross-sectional approach. The study population amounted to 568 toddlers. The sample technique using stratified random sampling and obtained 145 toddlers as the sample. The independent variables were socioeconomic and genetic factors via the questionnaire instrument. The dependent variable was the incidence rate of toddler stunting using the microtoise instrument. Data analysis was conducted using the Spearman rho test. The results of this study indicate that socioeconomic and genetic factors are related to the incidence rate of toddler stunting.

Results and Analysis: The results of the factors are; father's education analysis to stunting toddler $p = 0,002 < \alpha = 0,05$, mother's education to stunting toddler $p = 0,001 < \alpha = 0,05$; father's job to stunting toddler $p = 0,000 < \alpha = 0,05$, mother's activity to stunting toddler $p = 0,013 < \alpha = 0,05$, family income to stunting toddler $p = 0,002 < \alpha = 0,05$ and genetics to stunting toddler incidence $p = 0,000 < \alpha = 0,05$. The implication of this research is that the prevention of toddler stunting can be achieved by giving information about nutritious food with a low price and a method of processing food well that is affordable.

Keywords: Toddler with stunting, Genetic Factor, Social Economy.

Introduction

Stunting is a chronic nutritional problem, arising from a malnourished condition that accumulates over a long period of time¹. Stunting, according to the WHO Child Growth Standard, is based on the length-for-age (L/A) or height-for-age (H/A) index with a limit (z-score) less than -2 SD. Stunting is associated with an increased risk of morbidity and mortality, and stunted growth². Nutritional deficiencies that have received a lot of attention lately include a chronic nutritional problem in the form of short children (stunting).

Corresponding Author:

Dwi Ernawati
School of Health Sciences Hang Tuah,
Surabaya, Indonesia
Jl. Gadung No.1, Surabaya, Indonesia
Email: Dwiernawati@stikeshangtuah-sby.ac.id

Based on a preliminary study conducted by the researchers via an interview in February 2018, it showed that the residents around the Kenjeran Public Health Centre have been given counselling about the practice of providing nutritious food for children via an Integrated Service Post by the health workers. However, parents still do not apply the practice of giving healthy or nutritious food to their children correctly. Parents only provide side dishes in the form of tofu and tempeh. The incidence of stunting in toddlers in Indonesia is still very high, which was 35.6% (18.5% very short and 17.1% short) in 2010 and increased in 2013 to 37.2% (18.0% very short and 19.2% short) for those who experienced stunting. According to the results from Basic Health Research 2010, East Java was one of the provinces with a high stunting prevalence of 35.8% (20.9% very short and 14.9% short). The same thing was also shown in the results of the Basic Health Research in 2013, where the prevalence of stunted toddlers in the province of East

Java was included in the high group, which was between 30-39%³. The results of the preliminary study conducted at Kenjeran Public Health Centre Surabaya on February 15th, 2018 found that the results of stunting children in 2016 had a prevalence rate of 430 toddlers, or 14.78% (0.52% very short and 14.26% short).

One of the causes of stunting is socio-economic, where the family income influences the fulfilment of nutritional adequacy in toddlers which indirectly has an impact on their nutritional growth. Stunted children experience more disruption in carrying out their daily activities compared to children who are not stunted. Stunted children come from families with a low socio-economic status. Being of a low economic status is considered to have a significant impact on the possibility of children being thin and short⁴. Families with a good economic status can get access to better public services such as education, health services, and others so then they can affect the nutritional status of their children. In addition, the family's purchasing power is increased, so then the family access to food will be better⁵.

A nurse acts as an educator to the parents about the risk factors that causes the incidence of stunting in children, so it can minimise the incidence rate.

Method

This study used a non-experimental research design with an analytic observational study type which aimed to determine the relationship between the variables and to explain the relationships found with the cross-sectional approach. This is a type of research that emphasises on the measurement or observation of the independent and dependent variables one at a time, with a follow-up. The instrument used a questionnaire for the socio-economic data and a data questionnaire for the genetic factors related to the incidence rate of toddler stunting. The sampling technique used in this study was probability sampling via the stratified random sampling approach. The study was conducted at Kenjeran Public Health Centre, Surabaya.

Results

The relationship³ of the socio-economic and genetic factors with toddler stunting at Kenjeran Public Health Centre, Surabaya, as shown in the table 1 below.

Table 1: Characteristic demography of respondents

Father's Education	Stunting Toddler Category				Total	
	Very Short		Short		N	%
	f	%	f	%		
Low (Junior High School and below)	34	45.3	41	54.6	75	100
Moderate (Senior High School)	15	25.4	44	74.6	59	100
High (Academy/College)	1	9	10	90	11	100
Total	50	34.5	95	65.5	145	100
The value of Spearman's rho statistic test was 0.002 (p = 0.05)						
Mother's Education	Stunting Toddler Category				Total	
	Very Short		Short		n	%
	f	%	f	%		
Low (Junior High School and below)	37	45.6	44	54.3	81	100
Moderate (Senior High School)	12	22.2	42	77.7	54	100
High (Academy/College)	1	10	9	90	10	100
Total	50	34.5	95	65.5	145	100
The value of Spearman's rho statistic test was 0.001 (p = 0.05)						

Conted...

Father's Occupation	Stunting Toddler Category				Total	
	Very Short		Short			
	f	%	f	%	n	%
Merchant/ Entrepreneur	22	52.3	20	47.6	42	100
Fisherman	25	78.1	7	21.8	32	100
Civil Servant/Soldier/ Policeman	0	0	4	100	4	100
Private	3	4.8	59	95.1	62	100
Other	0	0	5	100	5	100
Total	50	34.5	95	65.5	145	100

The value of Spearman's rho statistic test was 0.001 (p = 0.05)

Mother's Occupation	Stunting Toddler Category				Total	
	Very Short		Short			
	f	%	f	%	n	%
Unemployed	47	32.1	73	60.8	120	100
Merchant/ Entrepreneur	0	0	11	100	11	100
Civil Servant/Soldier/ Policeman	0	0	1	100	1	100
Private	3	25	9	75	12	100
Other	0	0	1	100	1	100
Total	50	34.5	95	65.5	145	100

The value of Spearman's rho statistic test was 0.013 (p = 0.05)

Family Income	Stunting Toddler Category				Total	
	Very Short		Short			
	f	%	f	%	n	%
Low < 2,500,000	43	42.6	58	57.4	101	100
Middle 2,500,000-3,500,000	5	14.3	30	85.7	35	100
High > 3,500,000	2	22.2	7	77.7	9	100
Total	50	34.5	95	65.5	145	100

The value of Spearman's rho statistic test was 0.002 (p = 0.05)

Genetic Factors	Stunting Toddler Category				Total	
	Very Short		Short			
	f	%	f	%	n	%
Normal Parents	22	68.8	10	31.3	32	100
Genetic history of stunting family	15	35.7	27	64.3	42	100
Genetic history of stunting mother	4	11.4	31	88.6	35	100
Genetic history of stunting father	9	25	27	75	36	100
Total	50	34.5	95	65.5	145	100

The value of Spearman's rho statistic test was 0.001 (p = 0.05)

Based on the results of the Spearman rho test there was a significance value of p = 0.002 with a significance level of 0.01 (p < 0.05). It can be concluded that there is a relationship between the father's education, mother's education, father's occupation, mother's occupation, family income and genetic factors and the incidence rate of stunted toddlers at Kenjeran Public Health Centre, Surabaya (Table I).

Discussion

Malnutrition can result in a failure to thrive and stunting in children. It also increases morbidity and mortality, especially in vulnerable to nutrition and disease age groups, which is children under five (toddler). This is the group that suffers the most from malnutrition and the number in the overall population is quite large.

Various factors that influence the nutritional status of toddlers includes a lack of food supply, poor quality in the environment, socio-economic conditions (income, level of education, and employment) and family culture, such as family upbringing, as well as knowledge⁶.

Socio-economy is sub-divided into three; namely education, employment, and family income which will be discussed as follows. The high education level of the parents can change a person's diet, which ultimately affects the nutritional status of the family, including the children⁴. The level of formal education is a factor that determines whether or not someone easily absorbs and pursues the acquired knowledge⁷. This study is in line with the study of Aramico, Sudargo and Susilo (2013), which states that there is a relationship between the father's education and stunting ($p < 0.001$) and OR 3.37. The high education level of the parents can change a person's diet, which ultimately affects the nutritional status of the family. Researchers assume that a low level for the father's education, those who graduated from junior high school or below, can affect nutritional status.

Level of education will affect the knowledge that is possessed by someone. The low level of the mother's education will have an impact on her limited knowledge about a healthy lifestyle and the importance of nutrients for the health and nutritional status of their child⁸. The education of the parents will have a direct influence on childcare patterns, which will then affect the child's food intake. Parents with a better education tend to have the knowledge and ability to implement better knowledge than parents with a low level of education². These results are supported by Medhin's study (2010 in, Ngaisyah and Septriana, 2016) which stated that the mother's education level affects the incidence rate of stunting, showing that there is a significant relationship ($p = 0.000$) and OR 4.06.

The level of education will make it easier for a person or society to absorb information and to implement it in their daily behaviour and lifestyle.

A job is work, namely a series of tasks, that generates money for someone⁹. The household's economic status

can be determined by the work performed by the head of the household. The type of work done by the head of the household will determine how much of the household finances will be used to meet the needs of the family¹⁰. Researchers assume that those with jobs that generate less money can cause the household's children to experience a nutritional imbalance. The father's occupation status can also reduce the time spent together with the child, so the attention paid to the child's growth and development will decrease.

The quality of the mother's service in the family is determined by the mastery of information and the factor of adequate time availability. These two factors can be determined by the level of education, social interaction and occupation⁷. Changes in modernity can affect the family institution. The number of women who work outside home is increasing, both for self-actualisation and to meet the household's economic needs¹¹. Researchers assume that mothers who are staying at home and not working can take care and pay attention to the health and needs of their toddlers, which can support their growth better. Meanwhile, mothers who work have less time to pay attention to the growth of their children, so they are at a risk of malnutrition. The lack of nutrition needed by these toddlers is due to the business of the parents and their focus on their work; the attention to their children is thus reduced. A good nutritional intake often cannot be fulfilled by the child because of the family's economic crisis factor¹².

An adequate family income will support the child's growth and development because the parents can provide for their children's needs, both primary and secondary⁷. This study is also in line with the study of Aramico, Sudargo and Susilo (2013) which showed the significant relationship between family income and nutritional status ($p < 0.05$). The value of OR=3.5 95% indicates that families with a low economic status have a 3.5 times greater chance of their child suffering from malnutrition than families with a high economic status. Other studies that are in line with this result explained that the low socio-economic status (household assets) of the respondents has a 21 times greater risk of causing stunting compared to those with a high socio-economic status. Researchers assume that a family income that is below the District/City Minimum Wage has an impact on the growth of the toddler. This leads to the inability of the head of the family to meet the nutritional adequacy of their toddler.

The parents' height is associated with the physical growth of the children. A mother with a short body is one of the factors associated with the incidence rate of stunting. In toddlers, height is influenced by genetic and environmental factors during the growth period¹³. This result is in line with the study conducted by Hanum et al (2014, in Aulia, 2016) which showed that more stunted children have mothers of a short height compared to mothers of a normal height. Researchers assume that the parents' height is related to the incidence rate of stunting.

However, there are still many environmental factors that affect a child's height. In addition, several other studies have shown that the factors of education and work are related to the characteristics of parents, which is a cause of the high number of problems encountered by short toddlers. This study was supported by Mulvani (in Miko and Al-Rahmad, 2017), in that people with a high level of education generally pay more attention to their health problems.

Conclusion

Based on the findings in this study and testing the results, it can be concluded that socio-economic and genetic factors have a relationship with the incidence of stunting at Kenjeran Public Health Centre, Surabaya. This research is expected to provide information on the minimum family income required without reducing the supply of balanced nutrition in children. Cheap nutritious food and a good method of food processing is important. In addition, people can understand the incidence rate of stunting experienced by their children and become able to apply good nutrition to their children in an effort to minimise the number of stunting incidences.

Ethical Clearance: This study had passed ethical clearance issued by Ethical Committee of the Sekolah Tinggi Ilmu Kesehatan Hang Tuah Surabaya, Indonesia.

Source of Funding: This study is self-funded research project.

Conflict of Interest: None.

References

1. Rahmayana R. Relationship of Mother's Care Pattern with Stunting Events Children Aged 24-59 Months in Asoka II Posyandu Coastal Area Kelurahan Barombong, Tamalate District, Makassar City, 2014. Universitas Islam Negeri Alauddin Makassar, 2014.
2. Kusuma KE, Nuryanto N. Risk factors for the incidence of stunting in children aged 2-3 years (Study in East Semarang District). Diponegoro University, 2013.
3. Ministry of Health/Indonesia. Situasi balita pendek. [Short toddler situation]. Info Datin. 2016;2442-7659.
4. Aramico B, Sudargo T, Susilo J. Socioeconomic relations, parenting, eating patterns with stunting in elementary school students in the district of Lut Bawar, Central Aceh district. *J Gizi dan Diet Indones (Indonesian J Nutr Diet)*. 2016;1(3):121-30.
5. Ni'mah K, Nadhiroh SR. Factors Related to Stunting Events in Toddlers. *Media Gizi Indones*. 2016;10(1):13-9.
6. Linda O, Hamal DK. Relationship between Education and Parent Work and Parenting with Toddler Nutritional Status in Kota and Kabupaten Tangerang, Banten. *Pros Penelit Bid Ilmu Eksakta*. 2011;
7. Pahlevi AE. Determinants of nutritional status in elementary school students. *J Kesehat Masy*. 2012;7(2):122-6.
8. Aulia D. Determinan Stunting pada Anak Usia 24-59 Bulan di Kelurahan Cimahpar, Kecamatan Bogor Utara. [Determinants of Stunting in Children Aged 24-59 Months in Cimahpar Village, North Bogor District].
9. Amaanina Df. Exclusive Asian Relations, Characteristics of Parents and Babies Against Growth and Development 6-Month-Old Babies at Mojolaban Health Center Sukoharjo District, Central Java. Universitas Airlangga, 2016.
10. Merryana Adriani SKM, Kes M, Wirjatmadi B, Gk S. Toddler Nutrition and Health: the role of micro-zinc in the growth of infants. KENCANA Prenada Media Group, 2014.
11. Latifah E, Hastuti D, Latifah M. Effect of breastfeeding and psychosocial stimulation on socio-emotional development of children under five in the mother's family work and not work. *J Ilmu Kel Konsum*. 2010;3(1):35-45.
12. Devi M. Analysis of factors that influence the nutritional status of children in rural areas. *Tekmol dan Kejuru*. 2012;33(2).
13. Ngaisyah RD. Socio-economic relations with the incidence of stunting in infants in Kanigoró village, Saptosari, Gunung Kidul. *Med Respati*. 2015;10(4)

Paper

ORIGINALITY REPORT

15%

SIMILARITY INDEX

15%

INTERNET SOURCES

1%

PUBLICATIONS

4%

STUDENT PAPERS

PRIMARY SOURCES

1	directory.indianjournals.com Internet Source	6%
2	Submitted to Western Governors University Student Paper	1%
3	vdocuments.site Internet Source	1%
4	es.scribd.com Internet Source	1%
5	Maria Fatima Dete Deltu, Maria Mexitalia, Ali Rosidi. "Maternal perception of sickness as a risk factor of stunting in children aged 2-5 years", <i>Universa Medicina</i> , 2016 Publication	1%
6	Submitted to Universitas Islam Indonesia Student Paper	1%
7	www.ijphrd.com Internet Source	1%
8	www.sci-int.com Internet Source	1%



ejournal.undip.ac.id

Internet Source

1%

Exclude quotes On

Exclude matches < 1%

Exclude bibliography Off