THESIS

ASSOCIATION OF STUNTED IN OBESE ADOLESCENT AND THE RISK OF METABOLIC SYNDROME

BY

MUHAMMAD HARITS

NIM: 011911133088

MEDICAL STUDY PROGRAM

FAKULTAS KEDOKTERAN UNIVERSITAS AIRLANGGA

SURABAYA

2022

THESIS

ASSOCIATION OF STUNTED IN OBESE ADOLESCENT AND THE RISK OF METABOLIC SYNDROME

BY

MUHAMMAD HARITS

NIM: 011911133088

MEDICAL STUDY PROGRAM

FAKULTAS KEDOKTERAN UNIVERSITAS AIRLANGGA

SURABAYA

2022

THESIS

ASSOCIATION OD STUNTED IN OBESE ADOLESCENT AND THE RISK OF METABOLIC SYNDROME DR. SOETOMO

Scientific Paper

To fulfill the requirements of Research Module lecture

Fakultas Kedokteran Universitas Airlangga

Written By :

Muhammad Harits

NIM. 011911133088

MEDICAL STUDY PROGRAM

FAKULTAS KEDOKTERAN

UNIVERSITAS AIRLANGGA SURABAYA

2022

EXAMINER CONFIRMATION SHEET

ASSOCIATION OF STUNTED IN OBESE ADOLESCENT AND THE RISK OF METABOLIC SYNDROME

Thesis
By

Muhammad Harits
NIM. 011911133088

Approved and accepted after being tested by the Medical Study Program Examiner Team Medical of Medicine, Universitas Airlangga Surabaya

Surabaya, 27 October 2022
Approved by :

Examiner

Dr. Meta Herdiana Hanindita, dr SpA(K)
NIP.198402142019032009

Supervisor I

Dr. Nur Aisiyah Widjaja, dr, SpA(K)
NIP. 196912302014102001

Supervisor II

Dr. Meity Ardiana, dr. SpJP(K), FIHA, FICA, FAsCC
NIP : 197705032014122001

APPROVAL SHEET

ASSOCIATION OF STUNTED IN OBESE ADOLESCENT AND THE RISK OF METABOLIC SYNDROME

Thesis

Submitted as one of the requirements to complete the Medical Study Program at the Faculty of Medicine, Universitas Airlangga Surabaya

This proposal has been approved by:

Muhammad Harits
NIM. 011911133088

Supervisor I

Dr. Nur Aisiyah Widjaja, dr, SpA(K)
NIP. 196912302014102001

Supervisor II

Dr. Meity Ardiana dr, SpJP(K), FIHA, FICA, FAsCC
NIP : 197705032014122001

Head of Medical Program

Dr. Purwo Sri Rejeki dr., M.Kes.
NIP. 197506122005012003

STATEMENT OF ORIGINALITY

The undersigned, I:

Nama : Muhammad Harits
NIM : 011911133088

Study Program : Faculty of Medicine

Faculty : Faculty of Medicine

Level : Bachelor (S1)

I declare that I have not committed plagiarism in the writing of my thesis entitled:

ASSOCIATION OF STUNTED IN OBESE ADOLESCENT AND THE RISK OF METABOLIC SYNDROME

If one day it is proven to have committed plagiarism, then I will receive the sanctions that have been set.

Thus this statement letter I made truthfully.

Surabaya, 27 October 2022

Muhammad Harits NIM. 011911133088

ACKNOWLEDGMENTS

Alhamdulillah praise and gratitude to Allah SWT for the abundance of His grace and gifts so that they can complete this research. The researcher realizes that the realization of this thesis cannot be separated from the participation, assistance, support and encouragement from various parties. Therefore, on this occasion, the researcher would like to express his deepest gratitude to:

1. Prof. Dr. dr. Budi Santoso, Sp. OG (K) as the Dean of the Faculty of Medicine, Universitas Airlangga who has provided the opportunity to study at the Faculty of Medicine, Universitas Airlangga.

2. Dr. Pudji Lestari, dr., M. Kes as the Coordinator of the Medical Study Program who has given permission in making the thesis.

3. Dr. Muhammad Faizi, SpA(K) as the head of the Children's Department who has given permission in the making of the thesis.

4. Dr. Nur Aisiyah Widjaja, dr, SpA(K) as the main supervisor who always provides guidance, input, direction and takes the time during the preparation of the thesis.

5. Dr. Meity Ardiana, dr. SpJP(K), FIHA, FICA, FAsCC as a supervising lecturer who participated in providing input, evaluation, correction and taking the time during the preparation of the thesis.

6. Dr. Meta Herdiana Hanindita, dr SpA(K) as the examiner lecturer who has helped through criticism and suggestions and took the time during the preparation of the thesis.

7. Dr. Mahmudah, Ir., M.Kes who are willing to provide guidance on statistics through input, evaluation and correction during my seminar proposal.

8. Mrs. Eva who are prepared to offer assistance with statistics through input, assessment, and correction during my thesis proposal.

9. Mrs. Yosi, Mrs. Rinda and Ms. Anik who have helped take care of the administration for the smooth running of the trial.
10. Father, Mother, my dearest and beloved sister Kiki and my sister Ira, who never stop supporting, encouraging and praying for the smooth running of all academic affairs.

11. Arsya who is always there every rainy and sunny day. Thank you for the unlimited support.

12. My best colleagues from the ups and downs of preclinical Diva, Nadira, Ailsa, Zaki, Farid and Afkarina who fill my days and inspire me to go to college.

13. Supportive and caring colleagues, Kharis, Alfi, Sarah, Izza, Rio, Inggil, Hafiza, Farid, Saski, Hafidz, Donny, Hilmy, Hanif, Selly, Okta and whom I cannot mention one by one.

14. All parties who cannot be mentioned one by one who are involved in the preparation of this thesis. May Allah repay the kindness.
    Aaamiin.

Surabaya, 27 October 2022

Writer

ASSOCIATION OF STUNTED IN OBESE ADOLESCENT AND THE RISK OF METABOLIC SYNDROME

ABSTRACT

Background : Indonesia has a high prevalence of stunting. It is even ranked fifth among countries with the highest burden of stunted children. The stunting rate for children in Indonesia based on Riskesdas is 30.8 percent in 2018. Stunting that is not treated at the age of 5 years will be at risk. In Indonesia from 1999 to 2004 the prevalence of overweight and obesity increased from 4.2 and 1.9% in childhood to 8.8 and 3.2% in adolescence. The increase in the incidence of obesity is in line with the increase in the incidence of metabolic diseases.

Purpose : To analyze the association of stunted in obese adolescents and the risk of metabolic syndrome.

Methodes : The type of the research is an analytic observational study. The design of the research is a cross sectional study using the medical records from the inpatient of the Child Health Department of Dr. Soetomo Hospital between October 2019 - December 2019. The sample is obese adolescents aged 13-18 years from Junior High School and Junior High School in Sidoarjo and Surabaya who meet the criteria for metabolic syndrome.

Result : Based on data taken randomly between male and female gender, it was found that there is no significant association in stunted obese adolescents. Central obesitas (92%) is the most common component of the metabolic syndrome experienced by the sample, followed by Low HDL (47%), Hypertension (33%), Hypertriglyceride (19%), Hyperglicemia (6%). Chi square analysis test was carried out to determine the association between obese adolescents with metabolic syndrome found p-value = 0.169 or had a non-significant association.

Conclusion : There are significant differences in BMI, FPG and Blood Pressure between obese adolescents who are stunted and the risk of metabolic syndrome.

Keyword : Stunted, Obese Adolescent, Metabolic Syndrome

TABLE OF CONTENTS

LIST OF PICTURES

LIST OF TABLES

LIST OF ABBREVIATION

AT	: Adipose Tissue
BH	: Body Height
BL	: Body Length
CHD	: Coronary Heart Disease
Cm	: Centimeter
DBP	: Diastolic Blood Pressure
FPG	: Fasting Plasma Glucose
HDL	: High Density Lipoprotein
IFG	: Impaired Fasting Glucose
IGT	: Impaired Glucose Tolerance
LDL	: Low Density Lipoprotein
MetS	: Metabolic Syndrome
SBP	: Systolic Blood Pressure
SES	: Socioeconomic Status
T2D	: Type 2 Diabetes
WHO	: World Health Organization

LIST OF ADDENDUMS

No Addendums.