



Home (<https://ejournal.undip.ac.id/index.php/jgi/index>) > Archives (<https://ejournal.undip.ac.id/index.php/jgi/issue/archive>) > Vol 4, No 1 (2015) (<https://ejournal.undip.ac.id/index.php/jgi/issue/view/1864>) > Yasin (<https://ejournal.undip.ac.id/index.php/jgi/article/view/12321/0>)

DOI: <https://doi.org/10.14710/jgi.4.1.1-8> (<https://doi.org/10.14710/jgi.4.1.1-8>)

Pengaruh kombinasi vitamin c dan vitamin e terhadap Kadar malondialdehid plasma pasien diabetes mellitus tipe 2

*Yade Kurnia Yasin (<https://scholar.google.com/scholar?q=Yade+Kurnia+Yasin>) - Politeknik Kesehatan Kemenkes Gorontalo, Indonesia

([javascript:openRTWindow\('https://ejournal.undip.ac.id/index.php/jgi/rt/email/Author/12321/0'\);](https://ejournal.undip.ac.id/index.php/jgi/rt/email/Author/12321/0))

Martha Irene Kartasurya (<https://scholar.google.com/scholar?q=Martha+irene+Kartasurya>) - Fakultas Kesehatan Masyarakat, Universitas Diponegoro, Indonesia

RA Kisdjiamiatun RMD (<https://scholar.google.com/scholar?q=RA+Kisdjiamiatun+RMD>) - Fakultas Kesehatan Masyarakat, Universitas Diponegoro, Indonesia

Received: 17 Oct 2016; Published: 8 Dec 2016.

(<https://ejournal.undip.ac.id/index.php/jgi/about/editorialPolicies#openAccessPolicy>)

How to cite (IEEE): Y. K. Yasin, M. I. Kartasurya, and R. K. RMD, "Pengaruh kombinasi vitamin c dan vitamin e terhadap Kadar malondialdehid plasma pasien diabetes mellitus tipe 2," *Jurnal Gizi Indonesia (The Indonesian Journal of Nutrition)*, vol. 4, no. 1, pp. 1-8, Dec. 2016. <https://doi.org/10.14710/jgi.4.1.1-8> (<https://doi.org/10.14710/jgi.4.1.1-8>)

Citation Format: IEEE ([javascript:document.createElement\('script'\).setAttribute\('src','https://www.mendeley.com/minified/bookmarklet/loader.js'\);](https://www.mendeley.com/minified/bookmarklet/loader.js)) ([javascript:document.createElement\('script'\).setAttribute\('src','https://www.zotero.org/bookmarklet/loader.js'\);](https://www.zotero.org/bookmarklet/loader.js))

Abstract

Background: Malondialdehyde (MDA) levels produced by oxidative stress in type 2 diabetes mellitus (T2DM) is higher than in non diabetes patients. Vitamin C and E inhibit oxidative stress and MDA production. The purpose of this study was to prove the effects of combined vitamin C and vitamin E on MDA plasma levels in T2DM patients.

Methods: This double blind randomized pre post test control group design was carried out on 35 patients with T2DM without complication (age 40-60 yr) in Makassar. The treatment group (n=18) received vitamin C 250 mg/day plus vitamin E 400 IU/day and the control group (n=17) received placebo (seaweed powder 250 mg), for six weeks. Vitamin C was consumed before meal and vitamin E after meal. MDA levels were measured before and after supplementation by using TBARS method. Food intake and activity were derived from 24-hour recall method.

Results: There was no different on MDA levels at baseline ($p=0.151$). At the end of the study, MDA levels increased in control group (5.8 ± 2.74 to 7.2 ± 3.00 nmol/ml; $p=0.044$) but not in the treatment group (7.2 ± 2.88 to 7.7 ± 2.02 nmol/ml; $p=0.490$). There was no difference in MDA alteration between the groups ($p=0.316$). There was no different in MDA levels at the end of the study ($p=0.061$) and confirmed after controlling the confounding variables: vitamin E intake and fasting blood glucose ($p=0.809$).

Conclusion: Combined vitamin C 250 mg and vitamin E 400 IU for 6 weeks did not reduce MDA levels, but inhibit MDA production in T2DM patients.

Fulltext View (<https://ejournal.undip.ac.id/index.php/jgi/article/view/12321/9327>) | **Download** (<https://ejournal.undip.ac.id/index.php/jgi/article/download/12321/9327>)

Keywords: Malondialdehid; Vitamin C; Vitamin E; Diabetes Mellitus Tipe 2

Article Metrics: 4 (<https://badge.dimensions.ai/details/doi/10.14710/jgi.4.1.1-8?domain=https://ejournal.undip.ac.id>)



Article Info

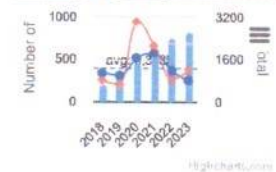
Section: Articles

Language : EN (#)

In Vol 4, No 1 (2015)

(<https://ejournal.undip.ac.id/index.php/jgi/iss>)

Statistics: 2678 (#tab-metrics) 7584 (#tab-metrics)



Recent articles

- > **Front Matter** (<https://ejournal.undip.ac.id/index.php/jgi/a>)
- > **Pengaruh intervensi pendidikan gizi terhadap peningkatan pengetahuan gizi, perubahan asupan zat gizi dan indeks massa tubuh remaja kelebihan berat badan** (<https://ejournal.undip.ac.id/index.php/jgi/a>)
- > **Pengaruh pendidikan kesehatan bagi ibu terhadap asupan energi, aktivitas fisik dan indeks massa tubuh pada anak kelebihan berat badan** (<https://ejournal.undip.ac.id/index.php/jgi/a>)
- > **Pengaruh kombinasi vitamin c dan vitamin e terhadap Kadar malondialdehid plasma pasien diabetes mellitus tipe 2** (<https://ejournal.undip.ac.id/index.php/jgi/a>)
- > **Back Matter JGI Des 2015** (<https://ejournal.undip.ac.id/index.php/jgi/a>)
- More recent articles** (<https://ejournal.undip.ac.id/index.php/jgi/iss>)

[Citing articles \(0\) \(#tab-citations\)](#)[Citing articles on Scopus \(0\) \(#tab-citationsScopus\)](#)[Copyright \(#tab-copyright\)](#)[Metadata \(#tab-metadata\)](#)

Last update:

No citation recorded.

Jurnal Gizi Indonesia (The Indonesian Journal of Nutrition) (e-ISSN: 2338-3119) has been covered by the following indexing and abstracting services :



Ciptaan disebarluaskan di bawah Lisensi Creative Commons Atribusi-BerbagiSerupa 4.0 Internasional.

[View JGI Stats](#)

Online 4 Visits today 32

Copyright ©2023 Universitas Diponegoro. Powered by Public Knowledge Project OJS and Mason Publishing OJS theme.



Jurnal Gizi Indonesia

(The Indonesian Journal of Nutrition)



Home (<https://ejournal.undip.ac.id/index.php/gi/index>) / About the Journal (<https://ejournal.undip.ac.id/index.php/gi/about>) / Editorial Team (<https://ejournal.undip.ac.id/index.php/gi/about/editorialTeam>)

Editorial Team

People > Editorial Team (<https://ejournal.undip.ac.id/index.php/gi/about/editorialTeam>)
Peer-Reviewer (<https://ejournal.undip.ac.id/index.php/gi/about/displayMembership/399/0>)

Editor-in-Chief



Ahmad Syaury, S.Gz., M.P.H., Ph.D. (ScopusID: [57200516331](https://www.scopus.com/authid/detail.uri?authorId=57200516331) (<http://www.scopus.com/authid/detail.uri?authorId=57200516331>))
(<https://orcid.org/0000-0002-9552-2834>) Department of Nutrition Science, Faculty of Medicine, Universitas Diponegoro, Indonesia

Editorial Board



Prof. Jeong-hwan Kim (ScopusID: [56051544900](https://www.scopus.com/authid/detail.uri?authorId=56051544900) (<http://www.scopus.com/authid/detail.uri?authorId=56051544900>))
Gyeongsang National University, South Korea



Prof. Ahmad Alkhatib (ScopusID: [12798864600](https://www.scopus.com/authid/detail.uri?authorId=12798864600) (<http://www.scopus.com/authid/detail.uri?authorId=12798864600>))
Teesside University, United Kingdom



Prof. Dr. Irwandi Jaswir, M.Sc. (ScopusID: [6603028871](https://www.scopus.com/authid/detail.uri?authorId=6603028871) (<http://www.scopus.com/authid/detail.uri?authorId=6603028871>))
International Islamic University Malaysia, Malaysia



Assist. Prof. Nattapol Tangsuphoom, Ph.D. (ScopusID: [57202355008](https://www.scopus.com/authid/detail.uri?authorId=57202355008) (<http://www.scopus.com/authid/detail.uri?authorId=57202355008>))
Mahidol University, Thailand



Assist. Prof. Li-Yin (Jessica) Lin, RD., PhD (ScopusID: [57208385479](https://www.scopus.com/authid/detail.uri?authorId=57208385479) (<http://www.scopus.com/authid/detail.uri?authorId=57208385479>))
National Taipei University of Nursing and Health Sciences, Taiwan



Adi Lukas Kurniawan, MS., Ph.D (ScopusID: [57208399056](https://www.scopus.com/authid/detail.uri?authorId=57208399056) (<http://www.scopus.com/authid/detail.uri?authorId=57208399056>))
European Molecular Biology Laboratory, Germany



Prof. dr. Mohammad Sulchan, MSc, DA.Nutr, SpGK(K) (ScopusID: [56377343600](https://www.scopus.com/authid/detail.uri?authorId=56377343600) (<http://www.scopus.com/authid/detail.uri?authorId=56377343600>))
Department of Nutrition Science, Faculty of Medicine, Universitas Diponegoro, Indonesia



Martalena Br. Purba, MCN, PhD (ScopusID: [6603121601](https://www.scopus.com/authid/detail.uri?authorId=6603121601) (<http://www.scopus.com/authid/detail.uri?authorId=6603121601>))
Department of Health Nutrition, Faculty of Medicine, Gadjah Mada University, Indonesia



Assist. Prof. Adriyan Pramono, Ph.D (ScopusID: [56825779200](https://www.scopus.com/authid/detail.uri?authorId=56825779200) (<http://www.scopus.com/authid/detail.uri?authorId=56825779200>))
(<https://orcid.org/0000-0003-2159-4576>) Diponegoro University, Indonesia



Dr.-Ing. Dase Hunaefi, S.TP, MFoodST (ScopusID: [36185421500](https://www.scopus.com/authid/detail.uri?authorId=36185421500) (<http://www.scopus.com/authid/detail.uri?authorId=36185421500>))
Department of Food Science and Technology, Faculty of Agricultural Technology, Bogor Agricultural University, Indonesia



Assoc. Prof. Dr. Diana Nur Afifah, S.TP, M.Si. (ScopusID: [56377075000](https://www.scopus.com/authid/detail.uri?authorId=56377075000) (<http://www.scopus.com/authid/detail.uri?authorId=56377075000>))
(<https://orcid.org/0000-0001-8808-1826>) Department of Nutrition Science, Faculty of Medicine, Universitas Diponegoro, Indonesia



Assist. Prof. Gemala Anjani, S.P., M.Si., Ph.D. (ScopusID: [56088545300](https://www.scopus.com/authid/detail.uri?authorId=56088545300) (<http://www.scopus.com/authid/detail.uri?authorId=56088545300>))
Department of Nutrition Science, Faculty of Medicine, Universitas Diponegoro, Indonesia



Dr. Ali Rosidi, SKM., M.Si. (ScopusID: [56157390100](https://www.scopus.com/authid/detail.uri?authorId=56157390100) (<http://www.scopus.com/authid/detail.uri?authorId=56157390100>))
The Indonesian Nutrition Association (PERSAGI) Central Java, Indonesia



Dr. dr. Mexitalia Setiawati, Sp.A(K) (ScopusID: [56624601400](https://www.scopus.com/authid/detail.uri?authorId=56624601400) (<http://www.scopus.com/authid/detail.uri?authorId=56624601400>))
The Dr. Kariadi General Hospital Medical Center of Semarang, Indonesia



Fitriyono Ajustaningwamo, S.TP, M.Si (ScopusID: [57201741176](https://www.scopus.com/authid/detail.uri?authorId=57201741176) (<http://www.scopus.com/authid/detail.uri?authorId=57201741176>))
(<https://orcid.org/0000-0003-2409-5449>) Department of Nutrition Science, Faculty of Medicine, Universitas Diponegoro, Indonesia



Fillah Fithra Dieny, S.Gz., M.Si. (ScopusID: [57194605388](https://www.scopus.com/authid/detail.uri?authorId=57194605388) (<http://www.scopus.com/authid/detail.uri?authorId=57194605388>))
Department of Nutrition Science, Faculty of Medicine, Universitas Diponegoro, Indonesia

Managing Editors



Dewi Marfu'ah Kurniawati, S.Gz., M.Gizi
Department of Nutrition Science, Faculty of Medicine, Universitas Diponegoro, Indonesia



Hartanti Sandi Wijayanti (ScopusID: [57201187569](https://www.scopus.com/authid/detail.uri?authorId=57201187569) (<http://www.scopus.com/authid/detail.uri?authorId=57201187569>))
Department of Nutrition Science, Faculty of Medicine, Universitas Diponegoro, Indonesia



Ayu Rahadiyanti, S.Gz, MPH (ScopusID: [57213823103](https://www.scopus.com/authid/detail.uri?authorId=57213823103) (<http://www.scopus.com/authid/detail.uri?authorId=57213823103>))
(<https://orcid.org/0000-0001-5329-6616>) Department of Nutrition Science, Faculty of Medicine, Universitas Diponegoro, Indonesia



Mursid Tri Susilo, S. Gz., M. Gizi
(<https://orcid.org/0000-0002-2809-6310>) Department of Nutrition Science, Faculty of Medicine, Universitas Diponegoro, Indonesia

User

Username
Password
☐ Remember me

S2 Sinta Accredited Based on Ministry of Research, Technology and Higher Education Decree No. 148 / M / KPT / 2020.



Information for Author

Focus and Scope

([/index.php/gi/about/editorialPolicies#focusAndScope](https://ejournal.undip.ac.id/index.php/gi/about/editorialPolicies#focusAndScope))

Author Guidelines

([/index.php/gi/about/submissions#authorGuidelines](https://ejournal.undip.ac.id/index.php/gi/about/submissions#authorGuidelines))

Download Manuscript Template

(<https://drive.google.com/file/d/1S98GQEdC7Y7qe2My4gE7e5AS/view>)

Download Form of Agreement

(https://drive.google.com/file/d/1WkvfsSWU1Np6_o2NlQg211zNl/view)

Guidelines for Online Submission

([/index.php/gi/about/editorialPolicies#custom-3](https://ejournal.undip.ac.id/index.php/gi/about/editorialPolicies#custom-3))

Online Submissions

([/index.php/gi/about/submissions#onlineSubmissions](https://ejournal.undip.ac.id/index.php/gi/about/submissions#onlineSubmissions))

Printed Journal Subscriptions

(<https://docs.google.com/forms/d/e/1FAIpQLSfHw5RuvjcEUQb31c0&w=1>)

Journal Contact

([/index.php/gi/about/contact](https://ejournal.undip.ac.id/index.php/gi/about/contact))

Download JGI Apps on Android now



(https://drive.google.com/open?id=16pl2yjoQouQw83yPI3_cn0mDMF_2dNX0)

Find Us on Facebook



(<https://www.facebook.com/profile.php?id=100015450430384>)

Notifications

View

(<https://ejournal.undip.ac.id/index.php/gi/notification>)

Subscribe

(<https://ejournal.undip.ac.id/index.php/gi/notification/subscribe>)

Journal Content

Search

Search Scope

All

Browse

By Issue

(<https://ejournal.undip.ac.id/index.php/gi/issue/archive>)

By Author

(<https://ejournal.undip.ac.id/index.php/gi/search/authors>)

By Title

(<https://ejournal.undip.ac.id/index.php/gi/search/titles>)

**Mut'ah Mustaqimatusy Syahadah, S.Gz, M.Gz**<https://orcid.org/0000-0001-5160-6131>, Department of Nutrition Science, Faculty of Medicine, Universitas Diponegoro, Indonesia• **Other Journals**<https://ejournal.undip.ac.id/index.php/index/search>• **Categories**<https://ejournal.undip.ac.id/index.php/index/search/categories>**Layout Editor****Dyah Arum Kumiamita, S.Hum**

Departemen Ilmu Gizi, Fakultas Kedokteran, Universitas Diponegoro, Indonesia

Jurnal Gizi Indonesia (The Indonesian Journal of Nutrition) (e-ISSN: 2338-7119) has been covered by the following indexing and abstracting services:



Copyright ©2023 Universitas Diponegoro. Powered by Public Knowledge Project OJS and Mason Publishing OJS theme.



JURNAL GIZI INDONESIA (THE INDOONESIAN JOURNAL OF NUTRITION)

FAKULTAS KEDOKTERAN UNIVERSITAS DIPONEGORO

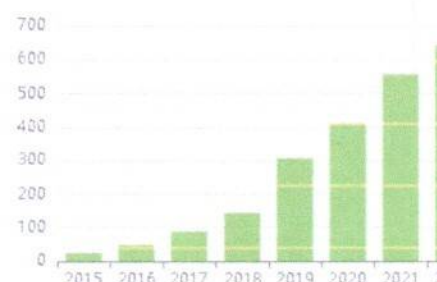
P-ISSN : 23383119 <> E-ISSN : 23383119 Subject Area : Health

0.625
Impact Factor2494
Google CitationsSinta 2
Current
Accreditation
[Google Scholar](#)
[Garuda](#)
[Website](#)
[Editor URL](#)

History Accreditation

2018 2019 2020 2021 2022 2023 2024 2025

Citation Per Year By Google Scholar



Journal By Google Scholar

	All	Since 2018
Citation	2494	2259
h-index	24	22
i10-index	59	57

Garuda [Google Scholar](#)

[The Association between Sleep Duration, Breakfast Routine and Nutritional Status in Indonesian Adolescents during COVID-19 Pandemic](#)

 Department of Nutrition Science, Faculty of Medicine, Universitas Diponegoro [Jurnal Gizi Indonesia \(The Indonesian Journal of Nutrition\) Vol 10, No 2 \(2022\): Juni 168-180](#)

2022 DOI: 10.14710/jgi.10.2.168-180 Accred: Sinta 2

[Differences in eating habits and physical activity before and during distance learning](#)

 Department of Nutrition Science, Faculty of Medicine, Universitas Diponegoro [Jurnal Gizi Indonesia \(The Indonesian Journal of Nutrition\) Vol 10, No 2 \(2022\): Juni 122-134](#)

2022 DOI: 10.14710/jgi.10.2.122-134 Accred: Sinta 2

[Effects of Sorghum Cookies \(Sorghum Bicolor L. Moench\) on Fasting Glucose, Triglyceride, High-Density Lipoprotein level, and Body Fat Percentage in Adolescent Obesity](#)

 Department of Nutrition Science, Faculty of Medicine, Universitas Diponegoro [Jurnal Gizi Indonesia \(The Indonesian Journal of Nutrition\) Vol 10, No 2 \(2022\): Juni 181-188](#)

2022 DOI: 10.14710/jgi.10.2.181-188 Accred: Sinta 2

[Anthropometric Markers, Visceral Adipocyte Index, Inflammation Markers and Bone Density in Reproductive Obese Women](#)

 Department of Nutrition Science, Faculty of Medicine, Universitas Diponegoro [Jurnal Gizi Indonesia \(The Indonesian Journal of Nutrition\) Vol 10, No 2 \(2022\): Juni 135-140](#)

2022 DOI: 10.14710/jgi.10.2.135-140 Accred: Sinta 2

[Anthropometric Measurements and Inflammatory Marker in Obese Women](#)

Department of Nutrition Science, Faculty of Medicine, Universitas Diponegoro
Indonesia (The Indonesian Journal of Nutrition) Vol 10, No 2 (2022): Juni 88-94

2022 DOI: 10.14710/jgi.10.2.88-94 Accred: Sinta 2

Jurnal Gizi

Get More with
SINTA Insight

Go to Insight

Improvement of Students and Snack Vendors Behavior After Received Health Promotion Program from UKSâs Cadres

Department of Nutrition Science, Faculty of Medicine, Universitas Diponegoro
Indonesia (The Indonesian Journal of Nutrition) Vol 10, No 2 (2022): Juni 189-199

2022 DOI: 10.14710/jgi.10.2.189-199 Accred: Sinta 2

Jurnal Gizi

Effect of Moringa (Moringa oleifera) Leaf Flour Supplementation on Total Antioxidant Content of Sprague Dawley Rat Serum Given High-Fat Diet

Department of Nutrition Science, Faculty of Medicine, Universitas Diponegoro
Indonesia (The Indonesian Journal of Nutrition) Vol 10, No 2 (2022): Juni 141-149

2022 DOI: 10.14710/jgi.10.2.141-149 Accred: Sinta 2

Jurnal Gizi

Provision of Local Food-Based Formula Using Pila Ampullacea, Tempeh, and Moringa Oleifera Leaves to the Acceptability and Nutrition Intake in Hemodialysis Patients

Department of Nutrition Science, Faculty of Medicine, Universitas Diponegoro
Indonesia (The Indonesian Journal of Nutrition) Vol 10, No 2 (2022): Juni 95-102

2022 DOI: 10.14710/jgi.10.2.95-102 Accred: Sinta 2

Jurnal Gizi

The Evaluation Study of Nutritional Knowledge from Sports Practitioners in The Quadrennial National Sports Competition 2021

Department of Nutrition Science, Faculty of Medicine, Universitas Diponegoro
Indonesia (The Indonesian Journal of Nutrition) Vol 10, No 2 (2022): Juni 200-205

2022 DOI: 10.14710/jgi.10.2.200-205 Accred: Sinta 2

Jurnal Gizi

The CIPP Model of Stunting Management Program During Covid-19 Pandemic in Semarang City

Department of Nutrition Science, Faculty of Medicine, Universitas Diponegoro
Indonesia (The Indonesian Journal of Nutrition) Vol 10, No 2 (2022): Juni 150-160

2022 DOI: 10.14710/jgi.10.2.150-160 Accred: Sinta 2

Jurnal Gizi

View more ...

Citation Per Year By Google Scholar

Journal By Google Scholar

	All	Since 2018
Citation	2494	2259
h-index	24	22
i10-index	59	57

Pengaruh suplementasi glisin terhadap kadar serum transferrin receptor (stfr) dan kadar hemoglobin (hb)

Dian Ayu Z¹

ABSTRACT

Background: Iron deficiency anemia (IDA) is still become a health problem in female adolescents. Iron supplementation only as a treatment for IDA still can not reach an optimum results. With that result, there was necessary to developing a strategy for iron supplementation, once treatment with glycine.

Objective: to describe the effect of glycine supplementation on serum transferrin receptor (sTfR) levels and Hemoglobin (Hb) levels in female teenagers with IDA.

Methods: This study was quasi experimental, pre post test control group design. The population was female teenagers age 12 – 18 years, Hb < 12 mg/dl, sTfR > 18,4 nmol/L, involving 50 subjects, divided into two groups. The first group was experiment group that given the supplement of 60 mg iron and 1 gr glycine a day for 4 weeks. The second group was control group that given the supplement of only 60 mg iron a day for 4 weeks. The data were analyzed with bivariate test, paired t test, independent t test.

Results: There was significantly lower decreased of sTfR levels in treatment group $6,923 \pm 10,13$ nmol/L than control group $0,809,65 \pm 9,076$ nmol/L with $p=0,008$, and significant increased of Hb levels in both treatment group $0,79 \pm 1,15$ mg/dl and control group $0,22 \pm 0,48$ mg/dl with $p=0,03$.

Conclusion: Glycine supplementation for 4 weeks decreased sTfR levels in female teenagers with IDA before controlled by vitamin c intake ($p=0,04$) and after controlled by vitamin c intake variable ($p=0,002$) and increased Hb levels before controlled by vitamin c intake ($p=0,02$) and after controlled by vitamin c intake variable ($p=0,04$).

Keywords: glycine; iron; iron deficiency anemia; sTfR; Hb; female teenagers.

ABSTRAK

Latar Belakang: Anemia defisiensi besi (ADB) masih menjadi permasalahan kesehatan bagi remaja putri. Suplementasi besi sebagai upaya penanggulangan ADB belum menunjukkan hasil yang optimal, sehingga diperlukan pengembangan suplementasi besi, salah satunya dengan glisin. **Tujuan:** Mendiskripsikan pengaruh suplementasi glisin terhadap kadar sTfR dan kadar Hb pada remaja putri anemia defisiensi besi yang disuplementasi besi. **Metoda:** Penelitian ini merupakan penelitian quasi experiment dengan pre-post test control group design. Populasi adalah remaja putri usia 12 – 18 tahun, Hb < 12 mg/dl, sTfR > 18,4 nmol/L, melibatkan 50 remaja putri yang dibagi menjadi dua kelompok yaitu kelompok perlakuan mendapat suplementasi besi 60 mg dan 1 gr glisin tiap hari selama 4 minggu, dan kelompok kontrol mendapat suplementasi besi 60 mg saja tiap hari selama 4 minggu. Data yang diteliti meliputi asupan zat gizi, kadar sTfR, kadar Hb. Data dianalisis menggunakan uji bivariat, paired t test, independent t test. **Hasil:** Terjadi penurunan kadar sTfR pada kelompok perlakuan $6,923 \pm 10,13$ yang berbeda secara bermakna dengan kadar sTfR kelompok kontrol $0,809 \pm 9,076$ ($p=0,008$). Terjadi peningkatan kadar Hb pada kelompok perlakuan $0,79 \pm 1,15$ yang berbeda secara bermakna dengan peningkatan kadar Hb kelompok kontrol $0,22 \pm 0,48$ ($p=0,03$). **Simpulan:** Suplementasi glisin menaikkan kadar Hb remaja putri penderita anemia defisiensi besi (ADB) sebelum dikontrol dengan variabel asupan vitamin C ($p=0,04$) dan sesudah dikontrol asupan vitamin C ($p=0,002$). Suplementasi glisin menaikkan kadar sTfR remaja putri penderita anemia defisiensi besi (ADB) sebelum dikontrol dengan variabel asupan vitamin C ($p=0,01$) dan sesudah dikontrol asupan vitamin C ($p=0,004$).

Kata kunci: glisin; besi; anemia defisiensi besi; sTfR; Hb; remaja putri

PENDAHULUAN

Anemia merupakan salah satu masalah gizi utama di seluruh dunia, yang terjadi tidak hanya di negara-negara yang sedang berkembang, tetapi juga di negara maju. Penderita anemia diperkirakan sebanyak dua milyar, dengan prevalensi terbanyak di wilayah Asia dan Afrika.¹ Kurang lebih sebanyak 50% anemia disebabkan oleh defisiensi zat besi atau disebut juga dengan Anemia Defisiensi Besi (ADB).²

Remaja putri merupakan kelompok yang memiliki resiko tinggi terjadinya ADB. Hal ini disebabkan adanya ketidakseimbangan antara asupan zat besi dari makanan dengan kebutuhan zat besi yang meningkat akibat masa pertumbuhan pesat dan menstruasi.³ Permasalahan ini dapat mengakibatkan terganggunya proses pertumbuhan, menurunkan kecerdasan dan perkembangan mental, menurunkan daya tahan tubuh sehingga rawan infeksi. Anemia menurunkan kualitas remaja putri dalam masa reproduksi untuk mempersiapkan kehamilan dan persalinan kelak.⁴

¹ IKIP PGRI Semarang

Pengaruh pemberian asi eksklusif dan non eksklusif terhadap mental emosional anak usia 3-4 tahun

Any Setyarini¹, Maria Mexitalia², Ani Margawati²

ABSTRACT

Background: Breastmilk is the best food contains all the elements of required nutrients for infant aged 0-6 months, and the attachment of the breastfeeding process give better of growth and mental emotional development of the infant. Less attachment between mother and infant caused mental emotional disorders, that affect to the next period of child's development..

Objective : The objective of this research was to analyze the differences of influence of exclusive breastfeeding and non exclusive breastfeeding history on child's emotional mental age of 3-4 years as well as analyze the most dominant variables.

Method: This was an observational analitic research with cross sectional approach. The subjects consisted of 84 children aged 3-4 years, living Banyumanik subdistrict Semarang, taken by purposive sampling and grouped into exclusive and non-exclusive breastfeeding. The data was collected by questionnaire, and the analysis using chi square and logistic regression.

Result: The study showed that most of children with exclusively breastfed had good mental emotional (76.2%), while children who did not get exclusively breastfed had a mental emotional problem (64.3%). There were relations between breastfeeding ($p=0,001$), mother's knowledge ($p=0,001$), mother's attitude ($p=0,001$), and mother's education level ($p=0,029$) to children's mental emotional. Education level of mother was the most influence variable for child's emotional mental after addjusted with mother's knowledge, mother's attitude, mother's education level, and birth weight of children.

Conclusion: Breastfeeding history, mother's knowledge, mother's attitude, and mother's education level were factors that influencing to children's mental emotional

Key words : exclusive breastfeeding; children; mental emotional disorder

ABSTRAK

Latar belakang : Air Susu Ibu (ASI) merupakan makanan terbaik yang mengandung semua unsur zat gizi yang dibutuhkan bayi usia 0-6 bulan. ASI dapat mempengaruhi tumbuh kembang bayi, termasuk perkembangan mental emosional melalui kelekatan yang terbentuk lewat menyusui. Kelekatan yang kurang antara ibu dan bayi dapat menyebabkan timbulnya gangguan mental emosional yang berpengaruh terhadap perkembangan anak pada tahap selanjutnya.

Tujuan : Penelitian ini bertujuan menganalisis pengaruh pemberian ASI eksklusif dan non eksklusif terhadap mental emosional anak usia 3-4 tahun serta menganalisis variabel yang paling dominan berpengaruh terhadap mental emosional anak usia 3-4 tahun.

Metode : Jenis penelitian ini adalah observasional analitik, dengan pendekatan cross sectional. Subjek sebanyak 84 anak usia 3-4 tahun yang berada di wilayah kerja puskesmas Kecamatan Banyumanik Semarang, diambil dengan metode purposive sampling dan dikelompokkan berdasarkan konsumsi ASI anak, ASI eksklusif dan ASI non eksklusif. Data penelitian diperoleh melalui wawancara dengan ibu responden menggunakan kuesioner pemberian ASI dan kuesioner skrining masalah mental emosional anak menggunakan SDQ (Strenght and difficulties quotionnare). Analisis data menggunakan uji Chi-Square dan regresi logistik.

Hasil : Hasil penelitian menunjukkan bahwa anak yang mengkonsumsi ASI eksklusif sebagian besar (76,2%) tidak memiliki masalah mental emosional, sedangkan anak yang tidak mengkonsumsi ASI eksklusif cenderung memiliki masalah mental emosional (64,3%). Ada hubungan riwayat pemberian ASI ($p=0,001$), pengetahuan ibu ($p=0,001$), sikap ibu ($p=0,001$) dan tingkat pendidikan ibu ($p=0,029$) terhadap mental emosional anak. Riwayat pemberian ASI merupakan variabel yang paling berpengaruh terhadap mental emosional anak setelah dikontrol oleh pengetahuan ibu, sikap ibu, tingkat pendidikan ibu, dan berat badan lahir anak.

Simpulan : Riwayat pemberian ASI, pengetahuan ibu, sikap ibu, dan tingkat pendidikan ibu merupakan faktor yang berpengaruh terhadap mental emosional anak.

Kata kunci : asi; anak; mental emosional

PENDAHULUAN

Air Susu Ibu (ASI) merupakan makanan terbaik yang mengandung semua unsur zat gizi yang dibutuhkan bayi usia 0-6 bulan. ASI juga mengandung zat kekebalan yang akan melindungi bayi dari berbagai

penyakit infeksi, bakteri, virus, parasit, dan jamur^{1,2,3}. ASI dapat mempengaruhi tumbuh kembang bayi, termasuk perkembangan mental emosional melalui kelekatan yang terbentuk lewat menyusui. Kondisi mental emosional pada usia dini dapat mempengaruhi periode perkembangan anak pada tahap selanjutnya. Anak dengan mental emosional yang baik pada usia dini akan mengalami perkembangan yang positif pada tahap berikutnya, dan pada akhirnya mereka akan

¹ SD Islam Pangeran Diponegoro Semarang

² Fakultas Kedokteran Universitas Diponegoro

Pengaruh pendidikan kesehatan bagi ibu terhadap asupan energi, aktivitas fisik dan indeks massa tubuh pada anak kelebihan berat badan

Miratul Haya¹, Mexitalia Setiawati E², Ani Margawati²

ABSTRACT

Background : The percentage of overweight children in Bengkulu (16.4%) is higher than the national (11.9%). Factors causing overweight is a high energy intake and low physical activity.

Objective : To analyze the impact of health education for mothers in changes of maternal behavior, energy intake, physical activity level and Body Mass Index (BMI) z-score among overweight children 3-6 years old.

Method : Quasi-Experiment with non-randomized pre-post test control group design. Subjects (48 mothers) were selected purposively and divided into 2 groups (treatment and control). Health education in the treatment group was conducted 6 times in 12 weeks. Analyses were conducted by Independent t-test, Mann Whitney, Paired t-test, Wilcoxon and Covariance.

Results: There was an increased in attitude score (20.9 ± 3.52), carbohydrate intake percentage ($3.7 \pm 7.30\%$) and physical activity level (0.04 ± 0.01) in the treatment group. The energy adequacy level ($-3.4 \pm 13.26\%$) and BMI z-score (-0.57 ± 0.26) decreased in the treatment group. There were difference between the treatment and control groups in attitude, energy adequacy level, physical activity level and BMI z-score after intervention ($p < 0.05$).

Conclusion: Health education for mothers affect the positive change in mother attitude in terms of the overweight children treatment and increased physical activity level, decreased energy adequacy level and BMI z-score in overweight children.

Keywords: Health education, overweight, attitude, energy adequacy level, physical activity level, BMI z-score.

ABSTRAK

Latar belakang: Persentase anak kelebihan berat badan (overweight) di Propinsi Bengkulu (16,4%) lebih tinggi daripada nasional (11,9%). Faktor penyebab overweight adalah asupan energi yang tinggi dan rendahnya aktivitas fisik.

Tujuan penelitian: Menganalisis pengaruh pendidikan kesehatan bagi ibu terhadap perubahan perilaku ibu serta asupan energi, tingkat aktivitas fisik dan skor-z Indeks Massa Tubuh (IMT) pada anak overweight usia 3-6 tahun.

Metode: Desain penelitian quasi-Experiment with non-randomized pre-post test control group. Subjek (48 ibu) diambil secara purposive sampling dan dibagi dalam 2 kelompok (perlakuan dan kontrol). Pendidikan kesehatan pada kelompok perlakuan dilakukan 6 kali dalam 12 minggu. Analisis statistik yang digunakan adalah Independent t-test, Mann Whitney, Paired t-test, Wilcoxon dan Kovarian.

Hasil penelitian: Terdapat peningkatan skor sikap ($20,9 \pm 3,52$), persentase asupan karbohidrat ($3,7 \pm 7,30\%$) dan tingkat aktivitas fisik ($0,04 \pm 0,01$) pada kelompok perlakuan. Terdapat penurunan tingkat kecukupan energi ($-3,4 \pm 13,26\%$) dan skor-z IMT ($-0,57 \pm 0,26$) pada kelompok perlakuan. Terdapat perbedaan sikap, tingkat kecukupan energi, tingkat aktivitas fisik dan skor-z IMT antara kelompok perlakuan dan kelompok kontrol setelah intervensi ($p < 0,05$).

Simpulan : Pendidikan kesehatan bagi ibu memberikan perubahan sikap yang positif pada ibu dan meningkatkan aktivitas fisik, serta menurunkan asupan energi dan skor-z IMT pada anak overweight.

Kata kunci: Pendidikan kesehatan, overweight, sikap, asupan energi, aktivitas fisik, skor-z IMT.

PENDAHULUAN

Kelebihan berat badan yang terdiri dari *overweight* dan obesitas merupakan definisi yang digunakan untuk menggambarkan kelebihan lemak tubuh.^{1,2} Masa prasekolah (usia 3-6 tahun) merupakan masa yang kritis bagi kondisi kelebihan berat badan di usia dewasa. Pada tahun pertama kehidupan, Indeks Massa Tubuh (IMT) meningkat dengan pesat dan bayi memiliki sel adiposa (sel lemak) dalam jumlah yang besar. Sel ini akan menetap jumlahnya antara usia 3 sampai 6 tahun, namun kembali meningkat tajam setelah itu (*adipose rebound*). Apabila pembentukan

jaringan lemak (*adipose rebound*) telah terjadi pada usia 3 hingga 6 tahun maka anak memiliki kecenderungan mengalami kelebihan berat badan saat tumbuh dewasa.³

Persentase kelebihan berat badan anak di dunia meningkat dari 4,2% pada tahun 1990 menjadi 6,7% pada tahun 2010 dan diperkirakan akan mencapai 9,1% pada tahun 2020.⁴ Persentase anak menderita kelebihan berat badan di Propinsi Bengkulu mengalami peningkatan yaitu 15,5% pada tahun 2010 menjadi 16,4% pada tahun 2013 dan persentase tersebut berada di atas persentase nasional (11,9%).^{5,6} Penyebab utama kelebihan berat badan pada anak adalah asupan energi yang tinggi dan aktivitas fisik yang kurang.^{7,8} Asupan energi adalah satu sisi dari keseimbangan energi, sehingga faktor makanan adalah faktor yang jelas

¹. Poltekkes Kemenkes Bengkulu

². Fakultas Kedokteran UNDIP Semarang



KOMISI ETIK PENELITIAN KESEHATAN (KEPK)
FAKULTAS KEDOKTERAN UNIVERSITAS DIPONEGORO
DAN RSUP dr KARIADI SEMARANG
Sekretariat : Kantor Dekanat FK Undip Lt.3
Jl. Dr. Soetomo 18, Semarang 50231
Telp/Fax. 024-8318350

121



RSUP Dr. KARIADI

ETHICAL CLEARANCE

No. 295/EC/FK-RSDK/2014

Komisi Etik Penelitian Kesehatan Fakultas Kedokteran Universitas Diponegoro- RSUP Dr. Kariadi Semarang, setelah membaca dan menelaah Usulan Penelitian dengan judul :

PENGARUH SUPLEMENTASI VITAMIN C DAN VITAMIN E TERHADAP KADAR MALONDEALDEHID (MDA) PLASMA PASIEN DIABETES MELLITUS TIPE 2, Studi di Puskesmas Makkasau Kecamatan Ujung Pandang, Makassar (Tesis S2 Ilmu Gizi Universitas Diponegoro)

Peneliti Utama : Yade Kurnia Yasin
Pembimbing : 1. dr. Martha I. Kartasurya, M.Sc, Ph.D
2. Dr.dr. RA.Kisdjarniatun RMD, M.Sc
Penelitian : Dilaksanakan di Makassar, Sulawesi Selatan

Setuju untuk dilaksanakan, dengan memperhatikan prinsip-prinsip yang dinyatakan dalam Deklarasi Helsinki 1975, yang diamended di Seoul 2008 dan Pedoman Nasional Etik Penelitian Kesehatan (PNEPK) Departemen Kesehatan RI 2011

Peneliti harus melampirkan 2 kopi lembar Informed consent yang telah disetujui dan ditandatangani oleh peserta penelitian pada laporan penelitian.
Peneliti diwajibkan menyerahkan :

- ✓ Laporan kemajuan penelitian (clinical Trial)
- ✓ Laporan kejadian efek samping jika ada
- ✓ Laporan ke KEPK jika penelitian sudah selesai & dilampiri Abstrak Penelitian.

Semarang, **14 MAY 2014**



Rumadhar Suprihati, M.Sc, Sp.THT-KL(K)
NIP. 19500621197703 2 001



P-ISSN: 1858-4942 / E-ISSN: 2338-3119

Jurnal Gizi Indonesia

(The Indonesian Journal of Nutrition)



Home (<https://ejournal.undip.ac.id/index.php/jgi/index>) / Archives (<https://ejournal.undip.ac.id/index.php/jgi/issue/archive>) / Vol 4, No 1 (2015)
(<https://ejournal.undip.ac.id/index.php/jgi/issue/view/1864>)

Vol 4, No 1 (2015)

Table of Contents

Front-Matter

Front Matter (<https://ejournal.undip.ac.id/index.php/jgi/article/view/12758>)

Journal Gizi Indonesia

Received: 8 Dec 2016; Published: 26 Feb 2022.



(<https://ejournal.undip.ac.id/index.php/jgi/article/view/12758/9553>)

1-70

Articles

Pengaruh kombinasi vitamin c dan vitamin e terhadap Kadar malondialdehid plasma pasien diabetes mellitus tipe 2 (<https://ejournal.undip.ac.id/index.php/jgi/article/view/12321>)

Yade Kurnia Yasin, Martha Irene Kartasurya, RA Kisdjamiatun RMD

Citations: 4 (<https://badge.dimensions.ai/details/doi/10.14710/jgi.4.1.1-8?domain=https://ejournal.undip.ac.id>) |

Language: EN (#) | DOI: [10.14710/jgi.4.1.1-8](https://doi.org/10.14710/jgi.4.1.1-8) (<https://doi.org/10.14710/jgi.4.1.1-8>)

Received: 17 Oct 2016; Published: 8 Dec 2016.



(<https://ejournal.undip.ac.id/index.php/jgi/article/view/12321/9327>)

1-8

Pengaruh pendidikan kesehatan bagi ibu terhadap asupan energi, aktivitas fisik dan indeks massa tubuh pada anak kelebihan berat badan (<https://ejournal.undip.ac.id/index.php/jgi/article/view/12322>)

Miratul Haya, Mexitalia Setiawati E, Ani Margawati

Citations: 0 (<https://badge.dimensions.ai/details/doi/10.14710/jgi.4.1.9-15?domain=https://ejournal.undip.ac.id>) |

Language: EN (#) | DOI: [10.14710/jgi.4.1.9-15](https://doi.org/10.14710/jgi.4.1.9-15) (<https://doi.org/10.14710/jgi.4.1.9-15>)

Received: 17 Oct 2016; Published: 8 Dec 2016.



(<https://ejournal.undip.ac.id/index.php/jgi/article/view/12322/9328>)

9-15

Pengaruh pemberian asi eksklusif dan non eksklusif terhadap mental emosional anak usia 3-4 tahun (<https://ejournal.undip.ac.id/index.php/jgi/article/view/12323>)

Any Setyarini, Maria Mexitalia, Ani Margawati

Citations: 2 (<https://badge.dimensions.ai/details/doi/10.14710/jgi.4.1.16-21?domain=https://ejournal.undip.ac.id>) |

Language: EN (#) | DOI: [10.14710/jgi.4.1.16-21](https://doi.org/10.14710/jgi.4.1.16-21) (<https://doi.org/10.14710/jgi.4.1.16-21>)

Received: 17 Oct 2016; Published: 8 Dec 2016.



(<https://ejournal.undip.ac.id/index.php/jgi/article/view/12323/9329>)

16-21

Pengaruh suplementasi glisin terhadap kadar serum transferrin receptor (stfr) dan kadar hemoglobin (hb) (<https://ejournal.undip.ac.id/index.php/jgi/article/view/12324>)

Dian Ayu Z

Citations: 0 (<https://badge.dimensions.ai/details/doi/10.14710/jgi.4.1.22-27?domain=https://ejournal.undip.ac.id>) |

Language: EN (#) | DOI: [10.14710/jgi.4.1.22-27](https://doi.org/10.14710/jgi.4.1.22-27) (<https://doi.org/10.14710/jgi.4.1.22-27>)

Received: 17 Oct 2016; Published: 8 Dec 2016.



(<https://ejournal.undip.ac.id/index.php/jgi/article/view/12324/9330>)

22-27