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HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW
KARYA ILMIAH: JURNAL ILMIAH

Judul Artikel Ilmiah : **Pesticide Exposure and Stunting among Children in Agricultural Areas**
Nama semua penulis : Apoina Kartini, Hertanto W Subagio, Suharyo Hadisaputro, Martha I Kartasurya, **Suhartono**, Budiyo
Status Pengusul (coret yg tidak perlu) : ~~Penulis Utama/ Penulis Utama & Korespondensi/ Penulis Korespondensi/ Penulis Anggota~~

Status Jurnal:
J Nama Jurnal : **The International Journal of Occupation and Environmental Medicine**
J Tahun terbit/Vol/No/halaman : 2009/Vol 10/No 1/Halaman:17-29
J Edisi (bulan, tahun) : January 2019
J ISSN : P: 2008-6520 O: 2008-6814
J DOI : [10.15171/ijoem.2019.1428](https://doi.org/10.15171/ijoem.2019.1428)
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| | | |
|---|---|--|
| a | Kelengkapan unsur isi artikel | State of art pentingnya penelitian nampak di introduction-aim-method-result dan diskusi. |
| b | Ruang lingkup & kedalaman pembahasan | Discussion is scientifically, previous studied related with the finding were cited correctly. |
| c | Kecukupan dan kemutahiran data/informasi dan metodologi | Method is detail aim, include all of aspect sample/properties instrument, how to interpretation ethic consideration, started analysis. |
| d | Kelengkapan unsur dan kualitas jurnal | The quality is good and important for environmental media. |

Semarang, 13 April 2020
Reviewer 1



Prof. Dr. dr. Tri Indah Winarni, MSi.Med, PA.
NIP 196605101997022001
Unit kerja: Fakultas Kedokteran

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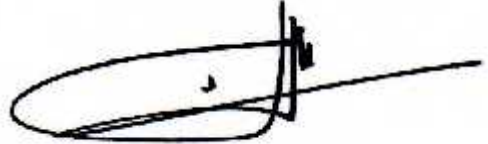
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| c | Kecukupan dan kemutahiran data/informasi dan metodologi | Metode penelitian yang digunakan sudah sesuai dan pemaparan data penelitian jelas, informatif sehingga mudah dipahami pembaca. |
| d | Kelengkapan unsur dan kualitas jurnal | Artikel diterbitkan oleh jurnal bereputasi dengan Q3 memiliki SJR 0.41 dan terindex scopus coverage 2010 – 2019. |

Semarang, 15-4- 2020
Reviewer 2

A handwritten signature in black ink, consisting of a large, stylized loop followed by a vertical line and a horizontal stroke extending to the right.

Prof. Dr. dr. Banundari Rachmawati, Sp.PK(K)
NIP. 196006061988112002
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International Journal of Occupational and Environmental Medicine [Open Access](#)
Volume 10, Issue 1, 2019, Pages 17-29

Pesticide exposure and stunting among children in agricultural areas

(Article) [\(Open Access\)](#)

Kartini, A.^a, Subagio, H.W.^b, Hadisaputro, S.^c, Kartasurya, M.I.^a, **Suhartono, S.^d** ✉️, Budiyono, B.^d 🔍

^aDepartment of Public Health Nutrition, Faculty of Public Health, Diponegoro University, Semarang, Indonesia

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^cDepartment of Internal Medicine, Faculty of Medicine, Diponegoro University, Semarang, Indonesia

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Abstract

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Background: The prevalence of growth disorders among school-aged children in Indonesia is high (30.7%). Pesticides have been massively used in Indonesian agricultural areas. **Objective:** To determine if exposure to pesticides is associated with stunting among children in agricultural areas. **Methods:** This case-control study included 160 children (48 cases and 112 controls) aged 8–12 years. Exposure to pesticides was measured based on the history of the exposure since perinatal period, infancy, and childhood of the participants. Stunting was determined as a height for age z-score (HAZ) < -2 SD. Other variables measured were levels of thyroid stimulating hormone (TSH), insulin-like growth factor-1 (IGF-1), hemoglobin, zinc, albumin, nutrient adequacy level (energy and protein), and history of infection, low-birth weight (LBW), and mother's height. **Results:** There were no significant difference between the cases and controls in terms of in the baseline characteristics, except for the median IGF-1 level; it was significantly ($p < 0.001$) lower in the cases (66.73 ng/mL) than the controls (112.57 ng/mL). High level of pesticide exposure ($p = 0.029$) and low IGF-1 levels ($p < 0.001$) were significantly associated with stunting. After adjusting for confounding variables, these variables were found to be independent risk factors for stunting in children (aOR 3.90, 95% CI 1.15 to 13.26; and aOR 8.35, 95% CI 3.65 to 19.14, respectively). **Conclusion:** Pesticide exposure could be a risk factor for the occurrence of growth disorders in children living in agricultural areas. Necessary actions should be taken to protect children living in agricultural areas from exposure to pesticides. © 2019, NIOO Health Organization. All rights reserved.

SciVal Topic Prominence ⓘ

Topic: Malnutrition | Child | Malnutrition SAM

Prominence percentile: 98.429 ⓘ

Author keywords

Agriculture Child Growth disorders Pesticides

Indexed keywords

EMTREE drug terms:

agricultural chemical albumin hemoglobin pesticide somatomedin C
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The relationship between pesticide exposure and umbilical serum igf-1 levels and low-birth weight: A case-control study in brebes, indonesia

Widyawati, S.A. , Suhartono, S. , Mexitalia, M.
(2020) *International Journal of Occupational and Environmental Medicine*

Pesticide residues in tomato and tomato products marketed in Majmaah province, KSA, and their impact on human health

Abd-Elhaleem, Z.A.
(2020) *Environmental Science and Pollution Research*

Association of prenatal pesticide exposures with adverse pregnancy outcomes and stunting in rural Bangladesh

Jaacks, L.M. , Diao, N. , Calafat, A.M.
(2019) *Environment International*

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- For an updated review along with a podcast on COVID-19 see the [Review Article](#).






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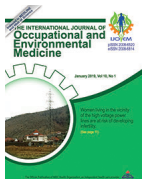
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Pesticide Exposure and Stunting among Children in Agricultural Areas

Apoina Kartini¹, Hertanto W Subagio²,
Suharyo Hadisaputro³, Martha I Kartasurya¹,
Suhartono Suhartono⁴, Budiyo Budiyo⁴

Abstract

Background: The prevalence of growth disorders among school-aged children in Indonesia is high (30.7%). Pesticides have been massively used in Indonesian agricultural areas.

Objective: To determine if exposure to pesticides is associated with stunting among children in agricultural areas.

Methods: This case-control study included 160 children (48 cases and 112 controls) aged 8–12 years. Exposure to pesticides was measured based on the history of the exposure since perinatal period, infancy, and childhood of the participants. Stunting was determined as a height for age z-score (HAZ) < -2 SD. Other variables measured were levels of thyroid stimulating hormone (TSH), insulin-like growth factor-1 (IGF-1), hemoglobin, zinc, albumin, nutrient adequacy level (energy and protein), and history of infection, low-birth weight (LBW), and mother's height.

Results: There were no significant difference between the cases and controls in terms of in the baseline characteristics, except for the median IGF-1 level; it was significantly ($p < 0.001$) lower in the cases (66.73 ng/mL) than the controls (112.57 ng/mL). High level of pesticide exposure ($p = 0.029$) and low IGF-1 levels ($p < 0.001$) were significantly associated with stunting. After adjusting for confounding variables, these variables were found to be independent risk factors for stunting in children (aOR 3.90, 95% CI 1.15 to 13.26; and aOR 8.35, 95% CI 3.65 to 19.14, respectively).

Conclusion: Pesticide exposure could be a risk factor for the occurrence of growth disorders in children living in agricultural areas. Necessary actions should be taken to protect children living in agricultural areas from exposure to pesticides.

Keywords: Pesticides; Growth disorders; Child; Agriculture

Introduction

Stunting, or poor linear growth (low length- or height-for-age) in young children is the result of poor nutritional intake, in terms of both quality and quantity, high morbidity, or a combination of both. These conditions are often found in low- and middle-income countries.¹ Low

consumption of macronutrients and micronutrients, especially during the growth period, will disrupt the process, and result in stunting.² In addition to food consumption factors, stunting is also influenced by genetic factors,^{3,4} recurrent (chronic) infections, such as acute respiratory infections (ARI) and diarrhea.⁵ Normal growth is the result of a complex interaction of genetic

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Received: Aug 4, 2018
Accepted: Dec 29, 2018

Cite this article as: Kartini A, Subagio HW, Hadisaputro S, et al. Pesticide exposure and stunting among children in agricultural areas. *Int J Occup Environ Med* 2019;1:17-29. doi: 10.15171/ijoem.2019.1428



Development and Validation of the Health Literacy Scale for Workers

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Abstract

Background: Health literacy has received growing attention in recent years to reduce health disparities. Health literate individuals can gain access, understand and use health information to maintain, improve and promote good health.

Objective: To develop and assess the psychometric properties of a tool for the measurement of health literacy among workers, the Health Literacy Scale for Workers (HELWS).

Methods: 15 companies were selected from the factories of the industrial city of Saveh. 450 (400 male and 50 female) workers from Saveh, Iran, were selected through a multistage random sampling. The study had two stages—a qualitative and a quantitative stage. In the qualitative phase, the workers' beliefs were extracted based on 61 in-depth interviews. Content validity was assessed with the help of 12 experts in the field of health education, public health and occupational health. Also, face validity was evaluated through interviewing with 20 workers. In the quantitative phase, the reliability of the questionnaire was evaluated by measuring the internal consistency and test-retest reliability. The construct validity was assessed by the principal component analysis using varimax rotation.

Results: In the exploratory factor analysis, six domains (*ie*, access, reading, understanding, assessment, decision making and applying health information, and self-efficacy) with 34 items were loaded; the model explained 64.3% of the total variance. Intraclass correlation coefficient and test-retest reliability ranged from 0.72 to 0.84 and 0.69 to 0.86, respectively.

Conclusion: It seems that the developed Persian questionnaire, HELWS, is a reliable and valid measure of the health literacy in workers.

Keywords: Health literacy; Reproducibility of results; Psychometrics; Surveys and questionnaires; Iran

Introduction

In the 21st century, people need to have a wide range of competencies and literacies to have good performance. These literacies are diverse, dynamic and flexible, as they range from the ability to read and write a newspaper to the ability to understand the written information and material.^{1,2} Health literacy is a series

of skills like reading, listening, analyzing, decision making, and the ability to apply these skills in health situations, which does not necessarily depend on the years of education or the general ability to read.³ In other words, health literacy could be recognized as the capacity to acquire, process, and understand the necessary information and the required services to make right decisions in the field of health.^{4,5} Given the

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Received: Oct 18, 2018
Accepted: Dec 29, 2018

Cite this article as: Azizi N, Karimy M, Abedini R, *et al*. Development and validation of the health literacy scale for workers. *Int J Occup Environ Med* 2019;1:30-39. doi: 10.15171/ijoem.2019.1498



The Association between Green Space and the Prevalence of Overweight/Obesity among Primary School Children

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Abstract

Background: Childhood overweight and obesity is a major health problem in many low- and middle-income countries such as Nepal. There is evidence indicating a significant association between health and access to green space.

Objective: To estimate the prevalence of childhood overweight and obesity, and to identify its association with green space among primary school children in Kathmandu metropolitan city, Nepal.

Methods: A cross-sectional study was conducted on 440 (195 male and 245 female) students studying in selected primary schools of Kathmandu metropolitan city. Mothers/caretakers of the participating children were also studied.

Results: Of the 440 children, 13.2% were overweight; 6.8% were obese. 4 of 16 studied variables that had significant associations with overweight/obesity in bivariate analyses, were found independent predictors of overweight/obesity after being adjusted for confounders. They included mode of transportation to school (aOR 2.08, 95% CI 1.12 to 3.88), consumption of sugary snack (aOR 2.57, 95% CI 1.12 to 5.91) and salty/savory snack (aOR 4.13, 95% CI 1.71 to 9.96), and the distance of a green space from child's residence (aOR 27.46, 95% CI 6.10 to 123.54).

Conclusion: One-fifth of the children in urban schools were found to be overweight or obese. The distance to a green space was identified as the most significant factor influencing childhood overweight/obesity.

Keywords: Overweight; Obesity; Green space; Child; Chronic disease; Nepal; Health

Introduction

Round the globe, childhood obesity is considered one of the most serious public health challenges of the 21st century leading to a significant increase in the prevalence of chronic diseases.^{1,2} The

mechanisms that lead to overweight and obesity are multifaceted, being associated with lifestyle, genetics and environment.³ Growing evidence identifies a robust and interactive association between children's physical environment and sedentary lifestyle.^{4,5} Proximity and accessibility are

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Received: Aug 8, 2018

Accepted: Dec 29, 2018

Cite this article as: Manandhar S, Suksaroj TT, Rattanapan C. The association between green space and the prevalence of overweight/obesity among primary school children. *Int J Occup Environ Med* 2019;1:1-10. doi: 10.15171/ijoem.2019.1425