

RESEARCH PAPER

CORRELATION BETWEEN BODY MASS INDEX (BMI) AND PENILE LENGTH IN PRE-PUBERTY CHILDREN AGE BETWEEN 9-11 YEARS OLD



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**CORRELATION BETWEEN BODY MASS INDEX (BMI) AND PENILE LENGTH IN PRE-PUBERTY
CHILDREN AGE BETWEEN 9-11 YEARS OLD**

Research Paper

This is to fulfil the requirement of the research module
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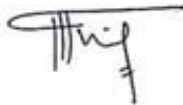
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Surabaya, 02 July 2022
Writer,

Okta Margarita Susiana

RINGKASAN

KORELASI ANTARA *BODY MASS INDEX* (BMI) DAN PANJANG PENIS PADA ANAK PRE-PUBERTAS DENGAN RENTANG USIA 9-11 TAHUN

Okta Margarita Susiana

Di penghujung abad 21 ini, masih banyak masyarakat yang kurang memperhatikan kondisi perkembangan sistem reproduksinya sehingga menimbulkan berbagai penyakit dan kondisi dimana penderitanya akan mengalami banyak masalah pada sistem reproduksinya, misalnya mikropenis. Kejadian mikropenis sendiri jarang disadari oleh orang tua dan anak, salah satu penyebab terjadinya mikropenis itu sendiri adalah abnormalitas indeks massa tubuh (IMT) pada anak. Diikuti dengan situasi pandemi saat ini, dimana seseorang dipaksa untuk lebih sering berada di rumah, membuat seseorang kurang melakukan olahraga sehingga angka BMI cenderung tidak normal.

Penelitian yang dilakukan selama ini umumnya hanya terfokus pada mikropenis secara umum, sedangkan hubungan antara Indeks Massa Tubuh (IMT) dan mikropenis jarang dikaji. Penelitian tentang korelasi BMI abnormal dan pengaruhnya terhadap mikropenis masih sangat terbatas. Pada subjek penis normal, Basuki melakukan penelitian tentang kejadian mikropenis pada anak dengan IMT abnormal, dengan hasil 2 dari 85 anak pada kelompok prapubertas (2,35%) mengalami mikropenis (Basuki et al., 2009).

Mikropenis sendiri adalah suatu kondisi diagnosis medis berdasarkan panjang penis. Diagnosis mikropenis dipertimbangkan jika panjang penis yang diregangkan kurang dari nilai yang setara dengan - 2,5 standar deviasi rata-rata pada pasien dengan alat kelamin pria internal dan eksternal yang normal. Mikropenis dapat disebabkan oleh sejumlah alasan, termasuk kelainan anatomis atau hormonal pada sumbu hipotalamus-hipofisis-gonad. Ini juga dapat ditemukan pada berbagai kelainan bawaan. Tes endokrinologis sangat penting untuk menentukan etiologi (Hatipolgu et al., 2013). Mikropenis sendiri memiliki tiga penyebab utama: hipogonadisme hipogonadotropik yang disebabkan oleh insufisiensi hipofisis/hipotalamus, hipogonadisme hipergonadotropik yang disebabkan oleh insufisiensi testis primer, dan idiopatik (Ludwig, 1999, Menon dan Khatwa, 2000).

Kelainan defek aktivasi testosteron termasuk: Defisiensi hormon pertumbuhan/IGF-1, Defek reseptor androgen, defisiensi 5- α reduktase, Sindrom *hydantoin* pada janin. Penyebab mikropenis lainnya, antara lain: Kelainan perkembangan (agenesis penis dan ekstrofi kloaka), dan juga idiopatik. Disebut idiopatik ketika jalur hipotalamus dan gonad dalam kondisi normal, hampir normal dalam peningkatan panjang penis sebagai respons terhadap testosteron eksogen dan juga ada maskulinitas selama masa pubertas.

Tujuan dari penelitian ini adalah untuk memperoleh data mengenai BMI dan panjang penis pada anak pre-pubertas dengan rentang usia 9-11 tahun, serta membuktikan adanya hubungan antara BMI dan Panjang Penis pada anak pre-pubertas dengan rentang usia 9-11 tahun.

Penelitian ini merupakan penelitian deskriptif observasional dengan desain *cross-sectional* untuk mempelajari hubungan antara *Body Mass Index* (BMI) dengan kejadian Mikropenis pada Masa Pra Pubertas (Usia 9-11 tahun). Penelitian ini akan dilaksanakan pada bulan Juli 2021 hingga Oktober 2021.

Jumlah subjek dalam penelitian ini adalah 148 orang yang terdiri dari kelompok pada rentang usia 9, 10, dan 11 yang termasuk dalam kriteria inklusi. Dari penelitian ini kami menemukan 2 anak laki-laki dengan mikropenis (1,35%). BMI anak laki-laki dengan mikropenis Normal dan yang lainnya *overweight*. Tidak hanya itu, kami juga menemukan 14 kasus anak laki-laki dengan penis kecil (*small penis*) (9,45%). 9 anak laki-laki dengan penis kecil mengalami IMT obesitas (64,2%), 3 laki-laki dengan IMT normal (21,4%), 1 laki-laki dengan *Mild Malnutrition* (7,1%), dan 1 anak laki-laki dengan *Overweight* (7,1%).

Kesimpulan penelitian ini adalah Tidak ada hubungan yang signifikan namun ada kecenderungan antara Indeks Massa Tubuh (IMT) dengan kejadian mikropenis pada anak pra pubertas usia 9-11 tahun di Surabaya.

ABSTRAK

ASOSIASI ANTARA *BODY MASS INDEX* (BMI) DAN PANJANG PENIS PADA ANAK PRE-PUBERTAS DENGAN RENTANG USIA 9-11 TAHUN

Okta Margarita Susiana

Tujuan:

Membuktikan adanya korelasi antara BMI dan Panjang Penis pada anak pre-pubertas dengan rentang usia 9-11 tahun.

Desain:

Penelitian ini merupakan penelitian deskriptif observasional dengan desain *cross- sectional*.

Metode:

Penelitian ini memiliki 148 subyek yang dikumpulkan melalui metode *cluster sampling* di Kota Surabaya dalam jangka waktu 2 bulan terhitung mulai bulan Oktober 2021-November 2021. Subyek yang terkumpul selanjutnya dilakukan pemeriksaan meliputi: pemeriksaan umum antropometri, perhitungan indeks masa tubuh, dan pemeriksaan khusus genital pengukuran panjang penis.

Hasil:

Dari penelitian ini kami menemukan 2 anak laki-laki dengan mikropenis (1,35%). BMI anak laki-laki dengan mikropenis Normal dan yang lainnya *overweight*. Tidak hanya itu, kami juga menemukan 14 kasus anak laki-laki dengan penis kecil (*small penis*) (9,45%). 9 anak laki-laki dengan penis kecil mengalami IMT obesitas (64,2%), 3 laki-laki dengan IMT normal (21,4%), 1 laki-laki dengan *Mild Malnutrition* (7,1%), dan 1 anak laki-laki dengan *Overweight* (7,1%).

Kesimpulan:

Tidak ada hubungan yang signifikan tetapi ada kecenderungan antara Indeks Massa Tubuh (IMT) dengan kejadian mikropenis pada anak pra pubertas usia 9-11 tahun di Surabaya.

Kata Kunci:

Body Mass Index (BMI), Mikropenis, *Pre-Puberty*, Laki-laki, Anak, Panjang Penis, Usia.

ABSTRACT

CORRELATION BETWEEN BODY MASS INDEX (BMI) AND PENILE LENGTH IN PRE-PUBERTY CHILDREN AGE BETWEEN 9-11 YEARS OLD

Okta Margarita Susiana

Aim:

Proving the correlation between BMI and micropenis in children aged 9-11 years

Design:

This research is a descriptive observational study with a cross sectional design.

Method:

In this study 148 subjects collected through the cluster sampling method in the city of Surabaya within a period of 2 months starting from October 2021-November 2021. The collected subjects were then examined including: general anthropometric examination, calculation of body mass index, and special examination of genital measurements. penis length.

Result:

From this study we found 2 boys with micropenis (1.35%). BMI of boys with normal micropenis and others overweight. Not only that, we also found 14 cases of boys with small penises (9.45%). 9 boys with small penis had obese BMI (64.2%), 3 boys with normal BMI (21.4%), 1 boy with Mild Malnutrition (7.1%), and 1 boy -Men with Overweight (7.1%).

Conclusion:

There is no significant correlation but it does have negative trend between Body Mass Index (BMI) and the incidence of micropenis in pre-puberty children aged between 9-11 years old in Surabaya

Keywords:

Body Mass Index (BMI), Micropenis, Men, Age, Penile length, Pre-Puberty, Children

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LIST OF ABBREVIATION

BMI	: Body Mass Index
DHT	: Dihidrotestosterone
GnRH	: Gonadotropic Releasing Hormone
hCG	: <i>Human Chorionic Gonadotropin</i>
Ht	: Height
SD	: Standard Deviation
UDT	: Undensus Testis
WHO	: World Health Organisation
Wt	: Weight