

Persamaan (equation) tinggi badan manusia usia lanjut (manula) berdasarkan usia dan etnis pada 6 panti terpilih di DKI Jakarta dan Tangerang tahun 2005

Fatmah, author

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Abstrak

Tinggi badan adalah salah satu indikator klinik utama dalam menentukan Indeks Massa Tubuh (IMT) dalam menentukan status gizi individu/populasi. Namun, pengukuran tinggi badan manusia usia lanjut (manula) cukup sulit dilakukan dan reliabilitasnya diragukan. Persamaan estimasi tinggi badan dari pengukuran tinggi lutut untuk memprediksi tinggi badan manula yaitu persamaan Chumlea telah dikembangkan beberapa tahun lalu, tetapi belum ada studi yang dilakukan di Indonesia untuk mengembangkan suatu persamaan bagi pengukuran tinggi badan populasi usia lanjut menurut bermacam-macam kelompok etnis. Oleh karena itu, suatu cross sectional studi untuk mengembangkan persamaan tinggi badan manula berdasarkan pengukuran dua parameter yaitu tinggi lutut dan panjang depa (knee height dan arm span) telah dilakukan pada bulan Desember 2005 lalu. Total 217 manula (usia 60 - 92 tahun) dari 3 kelompok etnik yaitu: Jawa (56,7%), Cina (31,3%), dan lain-lain (12,0%) berpartisipasi dalam studi ini. Pengukuran antropometri termasuk berat badan, tinggi badan, panjang depa, dan tinggi lutut dilakukan oleh ahli gizi terlatih. Kesalahan inter dan intra observer dilakukan untuk pengukuran antropometri tinggi lutut dan panjang depa manula. Temuan utama studi adalah rata-rata usia manula asal Cina adalah tertinggi di antara suku lainnya; kebanyakan manula mengalami gizi kurang (43%); distribusi rata-rata tinggi lutut dan panjang depa hampir sama di tiap kelompok etnis; ada perbedaan signifikan antara tinggi lutut dengan tinggi badan sebenarnya pada wanita lanjut usia (lansia), dan korelasi tertinggi ditunjukkan oleh parameter tinggi lutut pada wanita lansia dan panjang depa pada pria lansia. Persamaan Chumlea menunjukkan kecenderungan under-estimate pada pria lansia dan over-estimate pada tinggi badan wanita lansia. Kesimpulannya, tinggi badan tegak/sebenarnya merupakan teknik ideal untuk estimasi tinggi badan lansia. Tetapi, pada kasus di mana pengukuran itu sendiri tidak memungkinkan atau tidak reliable, maka tinggi badan dapat diestimasi dari indikator proksi tinggi badan. Pada studi ini, panjang depa menggambarkan korelasi tertinggi dengan tinggi badan sebenarnya pada pria lansia, dan tinggi lutut pada wanita lansia.

The Equation of Prediction Stature Based on Age and Ethnic in Six Institutionalized Elderly at DKI Jakarta and Tangerang, Year 2005. Height is an important clinical indicator to derive body mass index (BMI) predicting the nutritional status. However, height measurement in the elderly may impose some difficulties and the reliability is doubtful. Equations estimating height from knee height parameter to predict stature in elderly i.e. Chumlea have been developed, but no one study has developed an equation for Indonesian population according to variety of ethnics. Therefore, a cross sectional study was conducted to develop equations using two types of anthropometric measurements (knee height and arm span) for estimating stature in Indonesian elderly. A total of 217 elderly (aged 60 to 92 years old) from three major ethnic groups Javanese (56.7%), Chinese (31.3%), and others (12.0%) participated in this study. Anthropometric measurement included body weight, height, arm span, and knee height were carried out by trained nutritionist. Inter and intra observer errors was calculated for each anthropometric measurement of arm span and knee height of elderly. Main findings of this study were the mean of age of Chinese was the

highest among other ethnics; the most elderly suffered from underweight (43%); the distribution of mean knee height and arm span was almost similar in each ethnic group; there was a significant difference between knee height with stature in elderly women, and the highest correlation indicated by knee height in elderly women and arm span in elderly men. Chumlea equation showed tend to be under-estimate in stature of elderly men and over-estimate in stature of elderly women. In conclusion, standing height is an ideal technique for estimating the stature of elderly. However, in cases where its measurement is not possible or reliable, height can be estimated from proxy indicators of stature. In this study, arm span showed the highest correlation with standing height in elderly men, and knee height in elderly women.;The Equation of Prediction Stature Based on Age and Ethnic in Six Institutionalized Elderly at DKI Jakarta and Tangerang, Year 2005. Height is an important clinical indicator to derive body mass index (BMI) predicting the nutritional status. However, height measurement in the elderly may impose some difficulties and the reliability is doubtful. Equations estimating height from knee height parameter to predict stature in elderly i.e. Chumlea have been developed, but no one study has developed an equation for Indonesian population according to variety of ethnics. Therefore, a cross sectional study was conducted to develop equations using two types of anthropometric measurements (knee height and arm span) for estimating stature in Indonesian elderly. A total of 217 elderly (aged 60 to 92 years old) from three major ethnic groups Javanese (56.7%), Chinese (31.3%), and others (12.0%) participated in this study. Anthropometric measurement included body weight, height, arm span, and knee height were carried out by trained nutritionist. Inter and intra observer errors was calculated for each anthropometric measurement of arm span and knee height of elderly. Main findings of this study were the mean of age of Chinese was the highest among other ethnics; the most elderly suffered from underweight (43%); the distribution of mean knee height and arm span was almost similar in each ethnic group; there was a significant difference between knee height with stature in elderly women, and the highest correlation indicated by knee height in elderly women and arm span in elderly men. Chumlea equation showed tend to be under-estimate in stature of elderly men and over-estimate in stature of elderly women. In conclusion, standing height is an ideal technique for estimating the stature of elderly. However, in cases where its measurement is not possible or reliable, height can be estimated from proxy indicators of stature. In this study, arm span showed the highest correlation with standing height in elderly men, and knee height in elderly women.;The Equation of Prediction Stature Based on Age and Ethnic in Six Institutionalized Elderly at DKI Jakarta and Tangerang, Year 2005. Height is an important clinical indicator to derive body mass index (BMI) predicting the nutritional status. However, height measurement in the elderly may impose some difficulties and the reliability is doubtful. Equations estimating height from knee height parameter to predict stature in elderly i.e. Chumlea have been developed, but no one study has developed an equation for Indonesian population according to variety of ethnics. Therefore, a cross sectional study was conducted to develop equations using two types of anthropometric measurements (knee height and arm span) for estimating stature in Indonesian elderly. A total of 217 elderly (aged 60 to 92 years old) from three major ethnic groups Javanese (56.7%), Chinese (31.3%), and others (12.0%) participated in this study. Anthropometric measurement included body weight, height, arm span, and knee height were carried out by trained nutritionist. Inter and intra observer errors was calculated for each anthropometric measurement of arm span and knee height of elderly. Main findings of this study were the mean of age of Chinese was the highest among other ethnics; the most elderly suffered from underweight (43%); the distribution of mean knee height and arm span was almost similar in each ethnic group; there was a significant difference between knee height with stature in elderly women, and the highest correlation

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