

# Uji Kesahihan Formula Estimasi Berat Badan Berdasarkan Lingkar Lengan Atas dengan Berat Badan Aktual pada Pasien Rawat Inap Dewasa = Validity Test of Body Weight Estimation Formula Based on Upper Arm Circumference Against Actual Body Weight in Adult Inpatients

Inayah, author

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20521133&lokasi=lokal>

---

## Abstrak

Imobilitas sering dijumpai pada pasien yang menjalani perawatan di rumah sakit, yang menyebabkan sulit dilakukan penimbangan. Kondisi lain seperti amputasi, organ tubuh tidak lengkap kongenital, tumor, pembesaran organ, kehamilan, edema atau asites, menyebabkan penimbangan berat badan tidak akurat. Berat badan diperlukan untuk menentukan kebutuhan energi, protein, cairan, serta pemantauan kecukupan tatalaksana nutrisi pada pasien, serta untuk perhitungan dosis obat dan fungsi ginjal. Formula berat badan estimasi telah dikembangkan dengan berbagai parameter antropometri, salah satunya Formula Cattermole yang menggunakan komponen lingkar lengan atas (LILA), dengan beberapa keuntungan yaitu mudah dan cepat dengan alat ukur yang efisien dan mudah dibawa. Penelitian ini merupakan studi potong lintang untuk mengetahui kesahihan rumus estimasi berat badan dengan berat badan (BB) aktual pada pasien rawat inap dewasa di RSUPN Dr.Cipto Mangunkusumo Jakarta (n=96). Didapatkan hasil rerata BB aktual  $58,98 \pm 13,80$  kg, rerata BB estimasi berdasarkan LILA posisi tegak  $60.1 \pm 17.28$  kg, median BB estimasi berdasarkan LILA posisi baring 60.6 (21,2-114), beda rerata BB aktual dengan BB estimasi berdasarkan LILA posisi tegak -1.12 kg (p=0.16), beda rerata BB aktual dengan BB estimasi berdasarkan LILA posisi baring -1.38 (p=0.17). Dilakukan analisis Bland Altman, didapatkan limit of agreement (LOA) minimal dan maksimal berada di luar batas LOA 5 kg. Pola sebaran titik banyak di luar batas garis LOA baik minimal maupun maksimal pada kurva scatter plot Bland Altman. Sebagai kesimpulan, terdapat selisih antara berat badan estimasi menggunakan formula Cattermole dengan berat badan aktual, serta penelitian masih terbatas dilakukan pada pasien rawat inap di Indonesia. Formula Cattermole belum dapat digunakan pada populasi umum di Indonesia. Diperlukan penelitian lebih lanjut pada populasi lain di Indonesia dengan kriteria subjek yang lebih beragam

.....Immobility is often found in patients undergoing hospital treatment, which makes weighing difficult. Other conditions such as amputation, congenital incomplete organs, tumors, organ enlargement, pregnancy, edema or ascites, cause inaccurate weight measurement. Body weight is needed to determine energy, protein, fluid requirements, as well as monitoring the adequacy of nutritional management in patients, as well as for calculating drug doses and kidney function. The estimated body weight formula has been developed with various anthropometric parameters, one of which is the Cattermole Formula which uses the upper arm circumference component, with several advantages, namely being easy and fast with efficient and easy-to-carry measuring instruments. This study was a cross-sectional study to determine the validity of the formula for weight estimation with actual body weight in adult inpatients at Dr. Cipto Mangunkusumo Hospital Jakarta (n = 96). The results obtained mean actual body weight was  $58.98 \pm 13.80$  kg, mean estimated body weight based on upright MUAC was  $60.1 \pm 17.28$  kg, median estimated body weight based on supine MUAC was 60.6 (21.2-114) kg, the average difference is -1.12 kg (p=0.16) between actual body

weight and estimated body weight based on upright MUAC and -1.38 ( $p=0.17$ ) between actual body weight and estimated body weight based on supine MUAC. Bland Altman analysis was performed, limit of agreement (LOA) minimum and maximum, all outside the LOA limit of 5 kg. The distribution pattern of many points outside the LOA line on the Bland Altman scatter plot curve. In conclusion, there is a difference between the estimated body weight using the Cattermole formula and the actual body weight, and the research is still limited to inpatients in Indonesia. Cattermole formula can not be used in the general population in Indonesia. Further research is needed on other populations in Indonesia with more various subject criteria.