Perkiraan kapasitas vital pria dewasa berdasarkan pengembangan dada = Prediction of vital capacity in adult males based on the chest expansion

Tjahjadi Saputra, author

Abstrak

ABSTRAK
Ruang Lingkup dan Cara Penelitian: Kapasitas vital adalah salah satu indeks fungsi paru dan menggambarkan kesanggupan badan. Pemeriksaannya sering dilakukan pada calon Angkatan Bersenjata, calon atlet dan tenaga kerja. Pengukuran kapasitas vital dengan spirometer terbatas pada kota besar atau pusat pendidikan dokter dan mungkin memerlukan waktu yang cukup lama untuk sampai ke puskesmas terpencil.

Pada pemeriksaan kapasitas vital terjadi pengembangan dada dan menurut kepustakaan terdapat korelasi antara kapasitas vital dengan pengembangan dada. Penelitian ini bertujuan untuk menyusun suatu rumus perkiraan kapasitas vital berdasarkan pengembangan dada. Pengukuran kapasitas vital, beserta faktor yang mempengaruhinya (umur, tinggi dan berat badan, pengembangan dada), dilakukan pada 397 pria dewasa sehat, berusia 18 - 65 tahun. Korelasi antara kapasitas vital dengan faktor-faktor tersebut ditentukan, dan dibuat persamaan regresinya.

Hasil dan Kesimpulan: Subyek penelitian menunjukkan tinggi badan 150,7 - 190,3 cm; berat badan 40,6 - 90,7 kg, pengembangan dada 3,0 - 10,4 cm (X = 5,97 cm; SD = 1,25 cm) dan kapasitas vital 2,44 - 5,47 L (X = 3,62; SD = 0,56). Koefisien korelasi antara kapasitas vital dan pengembangan dada adalah 0,902 (p <0,001) dan persamaan regresi yang dibentuk adalah KV (L) = 1,131 + 0,392 PD (cm). Kapasitas vital hasil perhitungan rumus tersebut, dibandingkan dengan kapasitas vital basil pengukuran spirometer, menunjukkan selisih sebesar 0,43% (SD = 7,13%; p >0,1).

Dari hasil penelitian ini dapat disimpulkan bahwa kapasitas vital mempunyai korelasi cukup tinggi dengan pengembangan dada, dan kapasitas vital dugaan berdasarkan persamaan regresi tersebut cukup dapat dipercaya.
<hr><i>ABSTRACT
Scope and Method of Study: Vital capacity is one of the pulmonary function indices and one of the criteria of body fitness. Vital capacity of the prospective armies, athletes and workers is often assessed, from whom good results are expected. The Spiro meter needed for its measurement is available only in the big cities and teaching medical centers, and it will probably take a long time for it to be available in isolated public health centers.

The chest expands during the measurement of vital capacity, and according to the literature there is a correlation between vital capacity and the chest expansion. This study was carried out to obtain a regression formula for the prediction of vital capacity based on the chest expansion. Measurement of vital capacity, and

the factors that influence it (age, body height and weight, chest expansion) were obtained from 397 healthy adult males, 18 - 65 years of age. The coefficient of correlation between vital capacity and the factors that influence it was calculated, and the regression formulas were formed.

Findings and Conclusions: The subjects have a height of 150.7 - 190.3 cm, weight 40.6 - 90.7 kg, chest expansion 3.0 - 10.4 cm {X = 5.97 cm, SD = 1.25 cm) and vital capacity 2.44 - 5.47 liter (X = 3.62 L, SD = 0.56). The coefficient of correlation between vital capacity and chest expansion is 0.902 ($p < 0.001$), and the regression formula is FVC (L) = 1.131 + 0.392 TE (cm) (FVC = forced vital capacity, TE = thoracic expansion). The predicted vital capacity, compared to that measured with the Spiro meter, showed a difference of 0.43% (SD = 7.13%, $p > 0.1$).

The conclusions drawn are that the vital capacity has a high correlation with the chest expansion, and the predicted vital capacity based on the regression formula is quite reliable.</i>