ABSTRACT

Title of Abstract : ROC Analysis: Mid-Upper Arm Circumference (MUAC) for Predicting Underweight in Pregnant Women in Bandung City
Authors of Abstract : Fajria Saliha Puspita Prameswari 1, Widya Astuti 2, Ahdiyatul Fauza 3, Asti Dewi Rahayu Fitrianingsih 4, Al Mukhlas Fikri 5
Affiliation : Others
Correspondence E-mail : pfajriasaliha@upi.edu

Background : Maternal underweight impacts pregnancy outcomes, including low birth weight (LBW), preterm birth, miscarriage, bleeding during labor, and even maternal death, making early detection of maternal underweight essential. The threshold of MUAC ≤23.5 cm has traditionally been used as a predictor for Chronic Energy Deficiency (CED) in women of reproductive age (WRA), but its sensitivity and specificity in pregnant women remain unknown. Therefore, research is needed to enable early detection of underweight in pregnant women.

Objective : This study aims to assess the sensitivity and specificity of MUAC using ROC analysis to detect underweight in pregnant women.

Research Methods/ Implementation Methods : The design of this quantitative study was cross-sectional study. The subjects were 118 pregnant women which selected by a total sampling technique in the Cidadap District of Bandung City.

Results : ROC analysis indicated that pregnant women with a MUAC cut-off of ≤21.45 cm can be classified as underweight, with an AUC value of 86.6%, sensitivity of 82.5%, and specificity of 75%. Based on the identified cut-off point, the prevalence of underweight among pregnant women was 22.7%.

Conclusion/Lesson Learned : MUAC measurement is a reliable predictor of underweight in pregnant women, demonstrating good sensitivity and specificity. Therefore, a MUAC threshold of ≤21.45 cm is recommended for healthcare providers in Bandung City to detect the risk of underweight in pregnant women.

Keyword : Maternal underweight, MUAC, Pregnancy, ROC Analysis