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Radiologic studies of pubic length, ischial length and ischiopubic index of south-south and middle belt people of Nigeria.

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ABSTRACT

OBJECTIVE: The study was carried out to determine ischiopubic indices of the South-South and Middle Belt Nigerian populations for the purpose of clinical practice, forensic application and anthropological studies.

METHODOLOGY: Anteroposterior radiographs of 120 adult pelvis (age range, 18-65 years) were evaluated. Seventy of the radiographs (30 males and 40 females) were those of South-South people while 50 (20 males and 30 females) were those of Middle Belt people of Nigeria.Seventy of the radiographs (30 males and 40 females) were selected from the Radiology Department of the University of Port-Harcourt Teaching Hospital (UPTH), in South-South Nigeria. These were radiographs of people of South-South Nigeria. Fifty of them (20 males and 30 females) were selected from the Radiology Department of the University of Jos Teaching Hospital in Middle Belt, Nigeria. They were those of people of the Middle Belt of Nigeria. The ages of all subject ranged from 18-65 years. Ethical approval was obtained from the University of

Port Harcourt College of Health Sciences Ethic committee before study was conducted. The morphological measurements were pubic length, ischial length and ischiopubic index. Measurement was carried out by choosing 3 points on the radiograph: points A,B and C. Point A was the acetabular point where the three pelvic bones meet. Points B and C were the ischial tuberosity and pubic tubercle respectively. A marker was used to mark these points for clear visualization. The distance between these points were then measured with the aid of venier calliper in mm. Distance AB gave the ischial length while AC gave the pubic length. Each distance was measured twice and average recorded as the actual distance to ensure accuracy. The distance AC was divided by the distance AB, the resultant result was then multiplied by 100. This gave the ischiopubic index. (IP = AC/AB x 100).

RESULTS: The mean values of pubic length, ischial length and ischiopubic index of male South-South population were 70.0mm, 85.8mm and 81.4 respectively while those of their females were 84.0mm, 81.1mm and 104.2 respectively. The mean values for male Middle Belt population were 72.0mm, 85.7mm and 83.1 respectively while those of their females were 80.3mm, 82.3mm and 101.7 respectively. The mean pubic length was significantly longer in females in the two populations ($P<0.05$). The mean ischial length was, however, significantly longer in males in the two Nigerian populations ($P<0.05$). The mean ischio -pubic index was significantly higher in females than in males ($P<0.05$) with South-South females showing higher value than Middle Belt females and Middle Belt males showing higher values than South-South males. The differences between the two populations were however not significant. Using the radiographs, sex could be assigned to

83.5% of South-South males and 97.5% of South-South females while sex could be assigned to 87.6% of Middle Belt males and 98% of Middle Belt females. Comparison with other populations of the world showed that Nigerian population differed from most populations of the world previously studied.

CONCLUSIONS AND APPLICATION OF FINDINGS: The accurate determination of ischiopubic index is important in obstetrics and gynaecology while accurate determination of sex and race is important in both forensic and anthropological studies. Thus this study is important as it has provided the necessary data for determination of sex and for clinical practice in the Nigerian populations under investigation. The data is recommended to obstetricians, physical anthropologists, and forensic scientists.