

## **Relationship of Neck Pain Intensity with Anthropometric Measurements: A Cross Sectional Study Carried out in Patients with Chronic Neck Pain**

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Neck pain is a very common public health problem worldwide and is allied with both work absenteeism and disability in daily life. Chronic neck pain is common in the adult population. The aim of this study was to investigate the relationship between neck pain intensity and the anthropometric measurements of patients' and chronic neck pain. A cross sectional study was conducted on 285 chronic neck pain patients aged between 20 and 69 years attending the rheumatology clinic at the Colombo South Teaching Hospital. Data were collected by using an interviewer administered questionnaire. Pain Intensity (PI) was measured by a visual analog scale 0mm (no pain) to 100mm (worst possible pain). It was categorized as mild (1-25), moderate (26-50), severe (51-75) and worst possible pain (76-100). Standing height (StHt), weight (Wt), sitting height (SiHt), neck length (NL), neck circumference (NC) were measured. Body mass index (BMI) and relative neck length (RNL) was calculated. The mean age of the patients was  $52.79 \pm 12.15$  and 224 (78.5%) were females. Mean PI was  $75.03 \pm 11.991$ . The mean PI in male and female were  $74.69 \pm 11.246$  and  $73.55 \pm 11.977$  respectively and not significantly different ( $P = 0.497$ ). The mean BMI  $\pm$  SD was  $24.38 \pm 4.0404$  and 181 (63.5%) were overweight or obese from which 169 (93.4%) had severe or worst possible pain. The mean BMI of patients with 'moderate pain' ( $22.75 \pm 4.2958$ ) was not significantly different from mean BMI of 'severe and worst possible pain' ( $24.525 \pm 3.9979$ ). However, there was a significant ( $P = 0.031$ ), low positive ( $r = .146$ ) correlation between PI and BMI. The mean SHt of male and female were  $83.87 \pm 4.670$  cm and  $79.13 \pm 4.621$  cm respectively. A statistically significant ( $P = 0.034$ ), low positive correlation ( $r = 0.161$ ) was found, between PI and SiHt in female and there was no statistically significant, correlation between PI and SiHt in male ( $P = 0.789$ ,  $r = 0.041$ ). Male and female together, StHt was not associated with PI. RNL was associated with PI in both male and female. The mean NC of male and female were  $159.79 \pm 15.858$ mm and female  $142.81 \pm 16.88$ mm. The mean NL were  $363.15 \pm 37.064$ mm in male and  $339.14 \pm 29.708$ mm in female. NC and NL were not associated with PI in both sexes. This study concludes PI is associated with being overweight and obese. Sitting height of the women are significantly associated with PI but no association in male with chronic neck pain.

**Keywords:** Neck pain, Neck length, Neck circumference, Sitting height, BMI