

## CORRELATION OF CLINICAL AND RADIOLOGICAL KNEE MEASUREMENTS OF CHILDREN WITH GENU VARUS IN A TERTIARY CENTRE

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### INTRODUCTION:

Genu varus is characterized by separation of medial surfaces of the knees when the medial malleoli are in contact. Scanogram remain gold standard assessment for genu varus. This deformity can also be assessed using clinical examinations such as intercondylar distance (ICD) and clinical tibiofemoral angle (cTFA). This study aims to examine the correlation between clinical and radiographic measurements in these children to reduce risk of radiation exposure.

### METHODS:

A total of 58 children (age range 1.2 to 16.9 years) with genu varus were included in this study from January 2021 until June 2022. ICD, cTFA and radiographic mechanical tibiofemoral angle (mTFA) were measured from all the subjects.

### RESULTS:

There is a significant correlation between cTFA and radiological mTFA with Spearman's correlation coefficient of 0.764 (p value < 0.001). We also found that there is a significant moderate positive correlation between ICD and cTFA, and between ICD and mTFA with Spearman's correlation coefficient of 0.589 (p-value < 0.001) and 0.525 and (p-value < 0.001), respectively.

Table 1 showing correlation between TFA measurement (cTFA and mTFA) with ICD

TFA measurements	correlation Cc (r)	p-value
mTFA	cTFA	<0.001
	0.764	

cTFA	ICD	<0.001
	0.58	
mTFA	ICD	<0.001
	0.52	

### DISCUSSIONS:

We found a significant correlation between radiological mTFA and clinical TFA. This result is in parallel with studies by Navali et al in 2012, (r = 0.67) [1] and Kraus et al in 2004, (r=0.72) [2]. However, both studies were carried out in adults' population with osteoarthritis knee. To the best of our knowledge, this study is considered the first study to determine the correlation between radiological and clinical TFA especially in paediatric population with genu varus.

### CONCLUSION:

Clinical measurement using ICD and cTFA has good reliability and plays an important role in the management of children of genu varum. We recommend it to be used more often in clinical practice to reduce unnecessary radiation exposure in paediatric group patients.

### REFERENCES:

- Navali et. al. Sports Med Arthrosc Rehabil Ther Technol. 2012;4(1):40
- Kraus et. al. Arthritis Rheum. 2005;52(6):1730-1735.