# Image Perception by Analogue and Digital Viewing

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# Image Perception by Analogue and Digital Viewing

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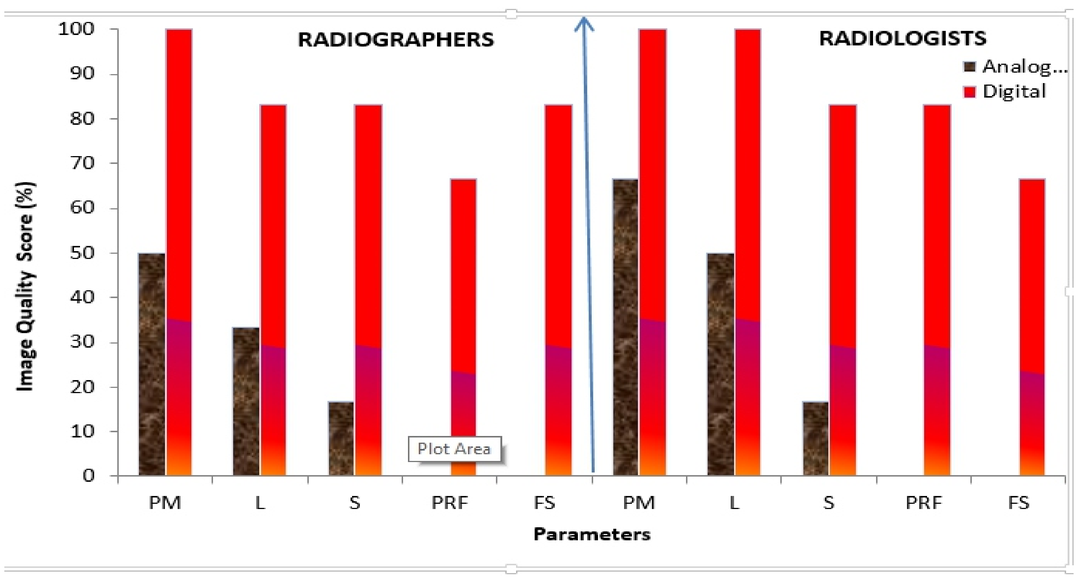
## Introduction

In recent years, we have witnessed dynamic development of diagnostic methods of imaging. The carrier of the diagnostic information is the image, obtained as a result of an x-ray beam, transmitted through the patient's body. Poor perception as a result of the choice of viewing method adopted (either analogue or digital system of viewing) to view this image has led to a series of misdiagnosis of disease conditions and pathologies, resulting in the wrong follow up medication and possibly subsequent death of the subject concerned. This study seeks to compare the subjective perception of images under analogue and digital viewing conditions to evaluate observer performance in image quality assessment due to mode of viewing. Results obtained could create awareness and enable the society gain more knowledge as per which system of viewing is best for diagnosis of health challenges.

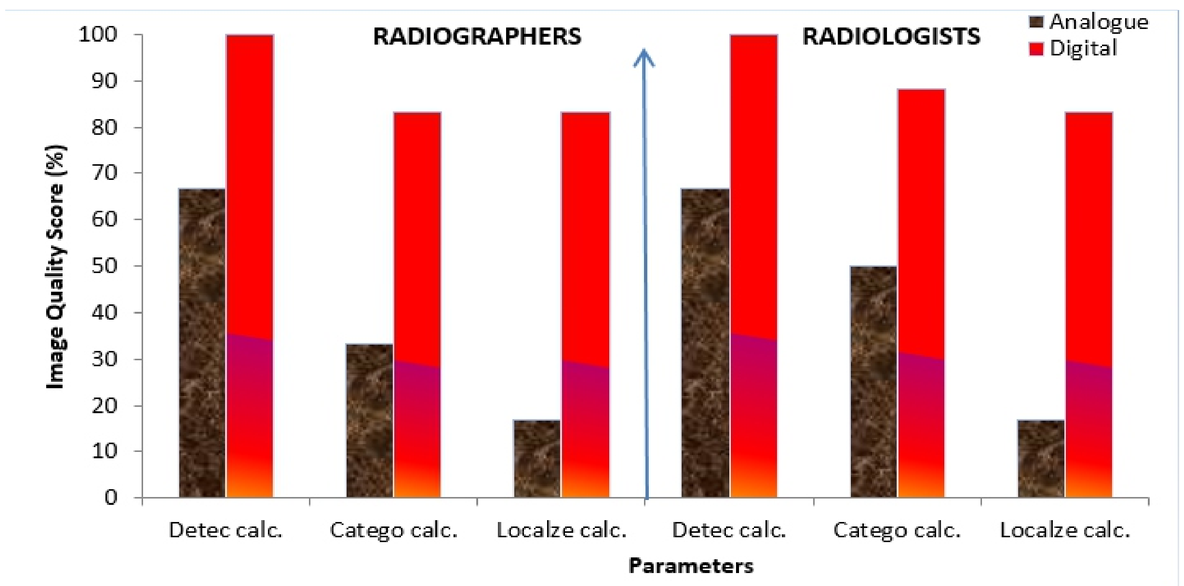
## Materials/Methods

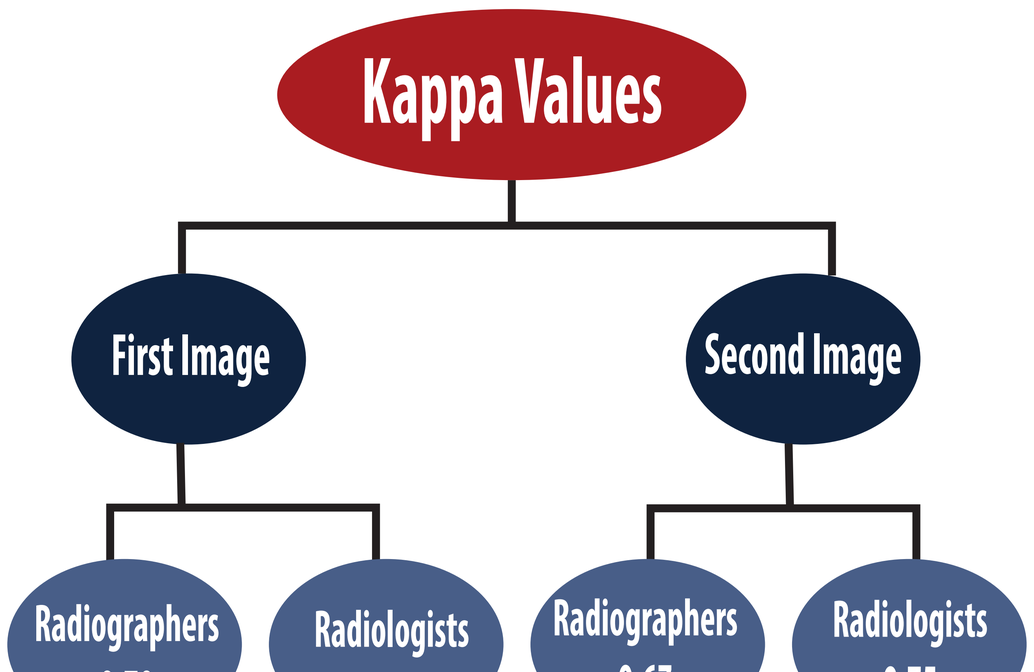
- 2 Abdominal Analogue images
  - Mounted directly on an illumination box
    - Viewed on an illumination box (Analogue Viewing)
      - 3 Radiographers independently
      - 3 Radiologists independently
  - Digitised using a 7.1Mp Canon digital camera and Adobe photoshop (ver.7)
    - Viewed on the screen (Digital Viewing)
      - 3 Radiographers independently
      - 3 Radiologists independently

## Results




PM-Psoas Muscle L- Liver S- Spleen PRF- Perirenal Fat Capsule FS- Flank Stripe




## Discussion

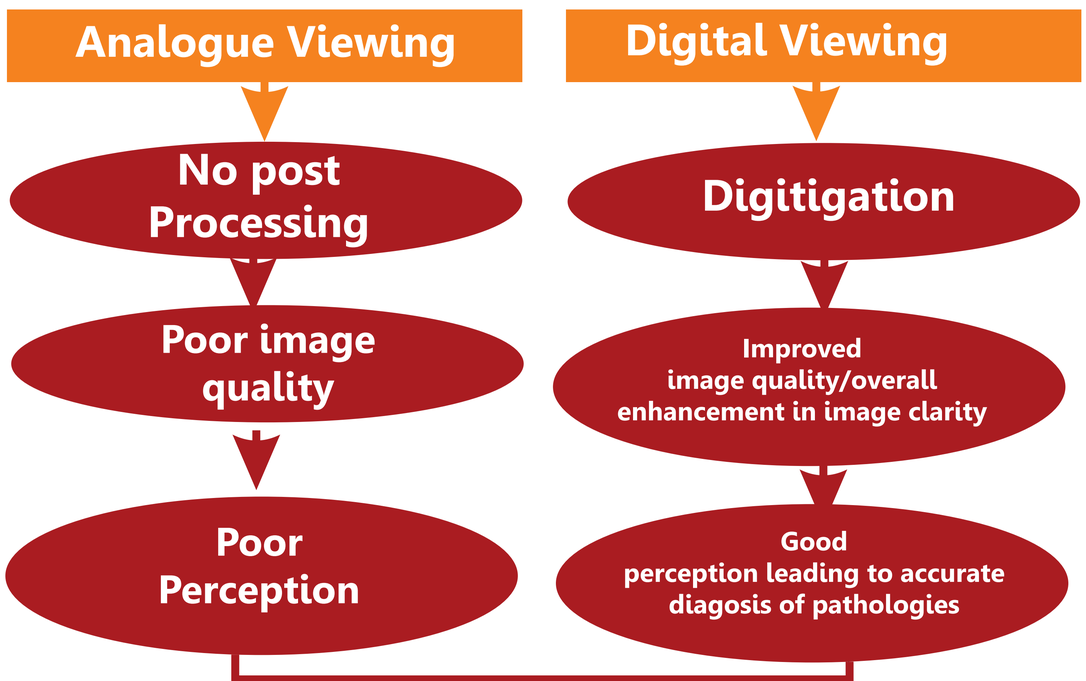
**Chart 1**

- Significant increase in the visibility of each parameter examined in the digital system of viewing among the observers largely due to digitization
- No PRF and FS among both groups of assessors in the analogue system due to absence of post processing
- Substantial level of agreement between the two groups of observers showing the level at which we can trust the kappa

**Chart 2**

- High values for the digitized image as a result of increased level of confidence in subtle information
- Higher percentage of preference for the digital system of viewing in revealing salient features as a result of image enhancement/editing
- Substantial level of agreement among both groups of assessors implying that they agreed in almost everything they saw

## Conclusion




Digital system of viewing offers a greater subjective perceptibilty as oppose to its analogue counterpart

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