

THE RELIABILITY OF PLAIN RADIOGRAPHY INTERPRETATION THROUGH WHATSAPP MESSAGING SYSTEM IN HAND TRAUMA CONSULTATION

¹Nishand G MBBS, Khoo S.S., MS Ortho

Orthopaedic Surgery, Faculty of Medicine , University of Malaya

INTRODUCTION:

WhatsApp Messaging System (WMS) is a common mode of communication within orthopaedic fraternity. It is a safe and reliable platform that has allowed doctors to share X-ray images via this application for consultation and discussion purposes. However, the reliability of evaluating these images via WMS is uncertain.

MATERIALS & METHODS:

Hand fracture X-rays from desktops were taken using iPhone XS and were sent to participants of various seniorities via the WhatsApp Messaging System application. The participants were asked to answer a set of questionnaires on fracture identification, fracture location, the pattern of fracture, fracture categorization, confidence level, if extra imaging modality needed, the tendency toward surgical fixation and how would they manage each case. All participants independently assessed the images on two separate occasions, on their mobile phone through WMS and on the desktop via PACs. There is a 30 days washout period between both assessments.

RESULTS:

The inter and intra-observer agreement for both periods of the study ranged from good to excellent ($0.6 < k < 1$) across all survey questions and intraobserver agreement between WMS and PACS was the highest among specialists.

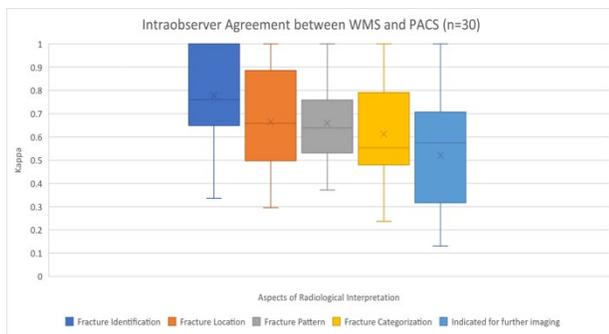


FIGURE 2: Intraobserver agreement by the kappa statistics.

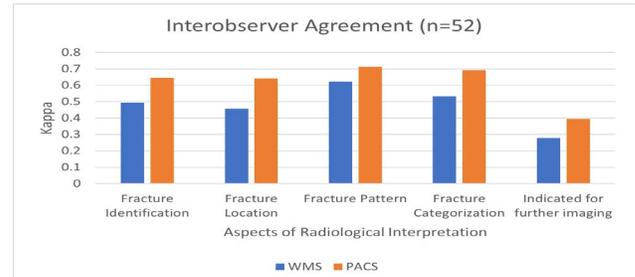


FIGURE 1: Interobserver agreement for all respondents measured on the five aspects of radiological interpretations using the Fleiss kappa statistics.

DISCUSSIONS:

This study focused on the statistical analysis of intraobserver and interobserver reliability of plain radiograph interpretation via WMS and PACS between the respondents.

CONCLUSION:

Images of plain radiograph captured using smartphones and transmitted via WMS is reliable for interpretation in orthopaedic trauma consultation. Although reliable, the purpose of this study is not to suggest a change from the current practice of using PACs to WMS in the interpretation of X-rays rather should be considered an important adjunct.

REFERENCES:

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