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International Journal of Current Research
Vol. 7, Issue, 05, pp.16238-16241, May, 2015

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

ISSN: 0975-833X

RESEARCH ARTICLE

EFFECTIVENESS OF WHATSAPP APPLICATION ON SMART PHONE AS A COMMUNICATION TOOL IN ORTHOPAEDIC SURGERY

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ARTICLE INFO

Article History:
Received 25th February, 2015
Received in revised form
23rd March, 2015
Accepted 10th April, 2015
Published online 31st May, 2015

Key words:
Communication tool, WhatsApp, Orthopaedics, Smart phones.

ABSTRACT

Objectives: The objectives of this study were to assess the efficacy of WhatsApp application on smartphone as a communication tool among the staff of orthopaedic surgery and also as a media for interspeciality communication in a tertiary care health centre.
Materials and Methods: We used WhatsApp as a medium of communication among staff, for various aspects of routine patient care, decision making in emergency trauma room and academic purposes.
Results: The use of WhatsApp led to a rapid communication amongst staff .Seeking advice of offsite senior consultant was never so easy, thus leading to a timely and appropriate management. All the residents and consultants associated with this study were satisfied with this new method of communication.
Conclusion: This method of communication is beneficial in the interest of patient care and academics. It is cheap, very quick and very easy to operate.

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***Citation*:** Dr. Ghani, Dr. Kanav Padha, and Dr. Rashid Anjam, 2015. "Effectiveness of WhatsApp application on smart phone as a communication tool in Orthopaedic surgery", *International Journal of Current Research,* 7, (5), 16238-16241.

INTRODUCTION

Communication among the members of any healthcare team is an integral part and plays a crucial role in effective patient management and healthcare delivery. The most commonly used method of distant communication is telephonic conversation. Though this form of communication is quick, but is less precise and not objective. Communication amongst orthopaedic team members invariably require radiographs there by rendering the verbal media of communication less effective and imprecise viz telephonic conversations. The exchange of multimedia via email or internet is not very speedy and moreover it's not easily avaialble to reach to everyone. Telemedicine gained momentum in 1990s for sharing clinical photographs over internet as downloadable files between computers (Baldwin and Langton, 2001). But it is quite time consuming and not so cost effective way of communication. With advances in technology, multimedia of one smartphone can be transferred to other smartphone through a number of mediums. WhatsApp messenger founded in 2009 by Brian Acton and Jan Koum is a proprietary, cross platform instant messaging subscription service for smartphones (Wikipedia, the free encyclopedia en.http://www.wikipedia.org/wiki/whatapp). In addition to text messaging, users can send each other images, video, and audio messages as well as their location using integrated mapping features. In this study we evaluated the usefulness of WhatsApp as a communication tool among consultants and residents of the particular unit orthopaedic department and its impact on day to day patient management.

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MATERIALS AND METHODS

This study was conducted in the post-graduate department of orthopaedics and spinal injury section of a tertiary care health centre (government medical college Jammu, India) from July 2013 till June 2014. Majority of the routine communication regarding patient care amongst staff was made through WhatsApp. The unit in-charge, who is the first author of this study, started a group named ORTHO1-C (Fig. 1) and all the members of the unit were made part of this WhatsApp group. Informed consent was taken from all the patients for taking their clinical and radiological photographs and sharing their imaging among the members of the unit. All the theatre lists (Fig. 2) were uploaded on the said group page and preoperatively radiographs were discussed. Post-operative

radiographs (Fig. 3) were also uploaded on this WhatsApp group and any change in rehabilitation programme was conveyed. It was also used for academic endorsements by residents to discuss about any difficulty in reading a radiograph or the management of complicated cases (Fig. 4). It was also readily used in emergency trauma room, to seek offsite consultant's opinion quickly (Fig. 5).

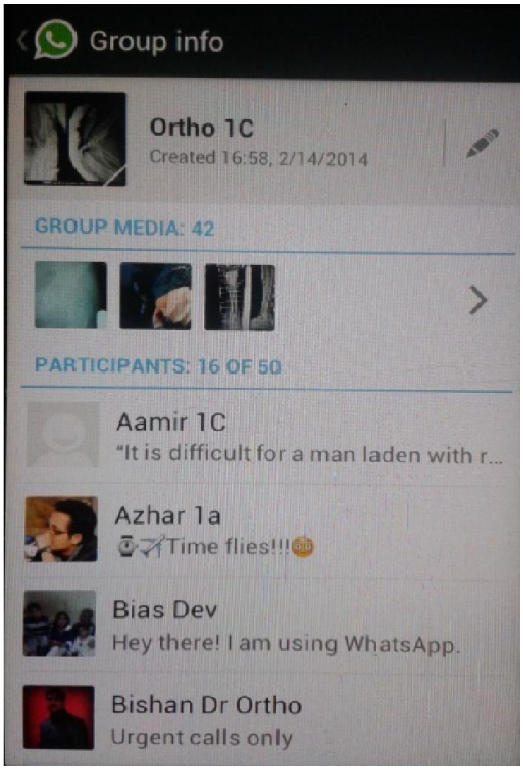

Fig.1. WhatsApp group Ortho 1C

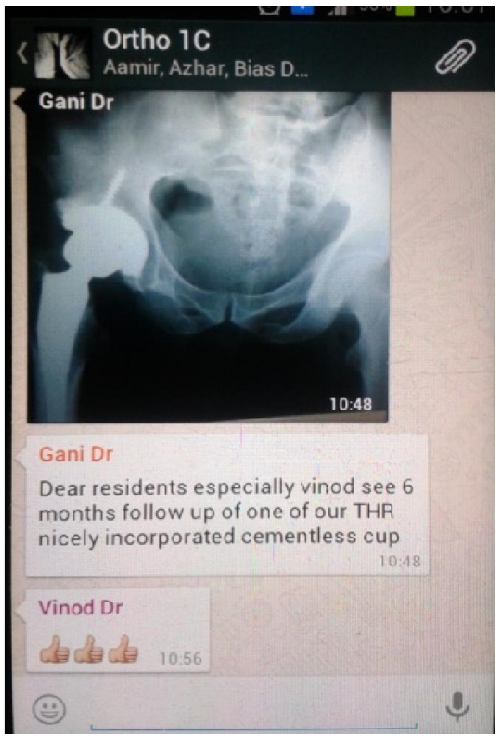

Fig.2. post operative radiographs being discussed

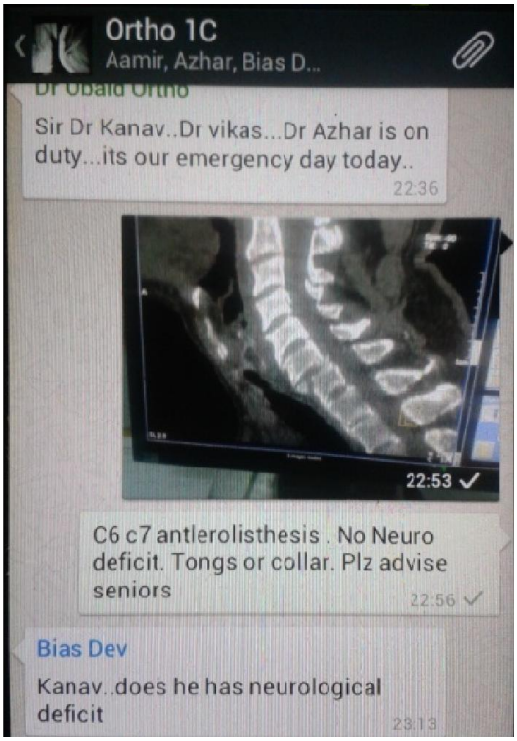

Fig.3. Residents in causality taking help of seniors

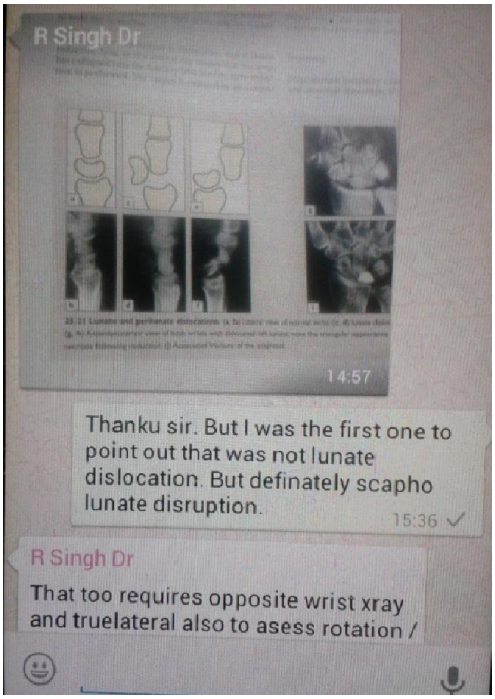

Fig.4. Academic discussions taking place in Ortho 1c

We also used WhatsApp for interspeciality communication including endocrinologists, CVTS surgeon and plastic surgeon, as many patients in orthopaedics and trauma setting were associated with substantial soft tissue loss; hence a plastic surgeon opinion was required. All the participants took an active part in discussion. Anonymity of patient was taken care of, patients name was never displayed on chat screen; instead ward/bed number and diagnosis were used. At the end of study

period a post-study questionnaire was given to each participant to know their opinion about this form of communication, the result of which was analyzed.

The post study questioner used is as follows

Post-study Questionnaire

We invite you to provide feedback on the study in order to assist us in maintaining and improving the quality and relevance of the material presented. We value your honest opinions. Please state the extent to which you agree or disagree with the following statements, where 5 is Strongly Agree (SA) and 1 is Strongly Disagree (SD), tick one per statement.

RESULTS

WhatsApp use on smart phone as a communication medium proved to be highly effective and rapid way of communication among all the team members of the concerned unit. Whole of the unit got instant information about the patients and thereby relevant feedback came quickly from the doctors dealing with the particular patient. There was hardly any need to ask and find out which member of the team is on which duty. At the very beginning of the day the team member on the emergency duty were displayed on the group site. There was effective and timely management of patients in emergency trauma setting. A total of 10 residents (4 senior, 6 junior) and 3 consultants were part of this study. There were countless discussions regarding patient care and latest developments. Almost 100 academic endorsements were carried during the study period. All the participants were quite enthusiastic, satisfied and were of the opinion that this method should be used in other specialities too. Various suggestions were also given. This form of communication has lead to significant improvement in communication among all the team members of the unit. Moreover it proved to be rapid, accurate and objective way of communication tool.

DISCUSSION

Communication is an integral and one of the most important aspects of the patient care. Radiological imaging plays key role in patient management in orthopaedics and trauma. Orthopaedic surgeons rely heavily on initial x-rays, check x-rays and serial x-rays for initial diagnosis, management plan, documentation, for case presentation, discussions and referral to colleagues and also for training and education purpose. Therefore the need of today's fast life is quick, easy and accurate communication and transfer of imaging modalities. This can be of great help in referral among professional for seeking timely and expert opinion. Advancing technology and machinery is a very important part of any healthcare delivery system. Today we live in an era where technology is advancing fast and is more accessible. There is a rapid growth in smart phones and its applications. The availability of this technology is becoming cheaper, faster and quality oriented. Especially the high resolution mobile camera is becoming the main feature of the smart phone and its various applications including social networking applications like WhatsApp. Mobile phone cameras these days are adequate for all practical purpose. Hence such technology should always be exploited positively to our advantage in healthcare industry in general and patient management in particular. In emergency trauma room timely diagnosis and management is the key factor for a good prognosis, the use of WhatsApp was of immense help in achieving this. As before this study the distant communication media was verbal telephonic conversations, which was imprecise due to lack of clinical and radiographic images. The drawbacks of vertical reporting system were eliminated by real time chat.

We reviewed literature and found only one report of use of this method as a communication media in orthopaedic surgery (Choudhari, 2014), there is also reported evidence of its use in plastic surgery (Wani *et al.,* 2013). Innovations similar to this modality have been used earlier to send radiographic images over network to remote physicians (Kim *et al.,* 2005). However previous methods like, e-mail, telephones were not easily accessible to all. This method is most cost effective as subscriber has to pay a minimal fee for internet services and WhatsApp application is free of charge at least for now. With smart phone high quality pictures of imaging modalities and even clinical photographs can be taken and shared easily and securely to another colleague for further management or opinion. This mode of communication and imaging transfer can easily be used by general practioners, paramedics, and at times by laymen as well. Conventional cameras can be costly and difficult to carry along always. Whereas smart phones are always available and easily portable compared to any digital camera and can be used at any time. However it cannot replace the need for personal communications and expert consultations, physical examination and direct communication to the patients.

It has also made administrative part of the clinical units very easy, because of one message all the members of the concerned unit gets instant and correct information. Moreover exact and accurate message/communication is transmitted to each other as it is always a written form of communication. The error/ misunderstanding/ miscommunication due to telephonic/ verbal communication can be eliminated. Also there will be record of the same communication hence there cannot be any denial among the team about any part of communication.

This is a very simple, cost effective and very useful in telemedicine in various setting. With passage of time this form of communication can become more validated tool in modern healthcare. But there can be concern regarding patient's confidentiality when pictures taken are stored in the doctor's personal phone, these problems however can be resolved by obtaining informed consent, ensuring absolute anonymity and by archiving the picture in a separate system like picture archiving and communication system (PACS) (Kim *et al.,* 2005). This was always a close circuit type of communication and there was no adverse event/medico-legal incident related to the breach of patient confidentiality during the course of this study. The drawback of this communication tool is that one has to be connected to internet on mobile phone round the clock. Moreover this form of conversation cannot form the part of the patient record.

Conclusion

The use of WhatsApp application on smart phones for communication among the members of the orthopaedic unit was found to be very easy, quick and effective; all the members were satisfied with this modality of communication. This is a quick, simple, cheap and very effective form of communication tool. We strongly recommend use of this tool in all the specialities and units for better and early patient care. More over we also recommend more and more studies on this aspect to prove or disprove the efficacy and safety of this tool of communication. However we strongly suggest ensuring zero tolerance for breach of patient confidentiality and this method by any means cannot replace the actual personal contact of clinician with patient.

Acknowledgement

Author is thankful to all the consultant colleagues and resident of ortho unit 1-C for active participation in this group and for their valuable feedback.

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