Research Paper Medical Science

Use Of Smartphones And Its Application Whatsapp as Effective Means of Communication in Low Resource Rural Gynaecological Laparoscopy Set Up In Chhattisgarh for Documentation, Obtaining Expert Opinion and Providing Early & Best Possible Treatment

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ABSTRACT

Aim and Objective: To assess the effectiveness of smartphone and its WhatsApp application as a communication method seeking opinion from the laparoscopic experts while performing laparoscopic surgeries in the medical college set up catering predominantly rural population in Chhattisgarh, India.

Methods: The treating team used smartphones and its WhatsApp application as a communication method with the laparoscopic experts in cases with difficult presentation: 1) intraoperatively 2) postoperatively & 3) for further planning with prompt feedback.

Results: During the study period, 50 gynaecological laparoscopic surgeries were done, out of which expert opinion was required for 22 surgeries. The surgical steps were then carried intraoperatively as per opinion by the experts & during postoperative period, feedback received helped consequently for further planning to provide early and best possible treatment.

Conclusion: This new method of communication is an effective and quick method for obtaining expert opinion in difficult surgeries thereby providing quality and expert care even from distant places. The method is quick and easy to operate.

KEYWORDS Smartphone, WhatsApp, Laparoscopic surgeries

Background

Communication between the health care professionals helps discussing and understanding the clinical presentation of the patients and hence providing best individualized treatment. With the advent of modern technologies in the last two decades, this has been effectively achieved through electronic gadgets and mobiles. The invention of smartphones due to their powerful onboard computing capability, capacious memories, large screens, and open operating systems that encourage application development has changed the scenario for the betterment in the field of medicine**[1]**. Owing to their portability, ability to update, speed, and simplicity, smartphone apps are ideal tools for quick reference especially when it is not feasible to access a desktop computer **[2]**. Various studies have found their significance in the domains of patient care and monitoring, use of health related applications (commonly called apps) for the layperson and physician or student reference apps and for proper communication, education, and research.**[3]**.

In the settings with poor facilities and resources, the smartphone was found as useful tool in communicating the findings, to aid in interpretation and diagnosis **[4],[5],[6]**. The smartphone instant messaging application whatsapp founded in 2009 by Brian Acton and Jan Koum, both veterans of Yahoo, based in Santa Clara, California **[7]** gives opportunity to timely communicate with comparative low cost without compromising the quality of the content of the data to be shared. A few studies tried to positively explore its use in patient care in the fields of surgery, orthopedics psychiatry, but none till date in the gynaeological surgery set up. In this study, we tried to assess the effectiveness of smartphones and its WhatsApp application as a communication method seeking opinion from the laparoscopic expert senior authorities while performing various laparoscopic gynaecological surgeries in the medical college set up catering predominantly rural population in Chhattisgarh, India and also to study incidences of opinion needed in different diagnosis & various laparoscopic surgeries.

Aim & Objectives

To Assess the effectiveness of smartphones and its WhatsApp application as a communication method seeking opinion from the laparoscopic expert& senior authorities while performing various laparoscopic surgeries in the medical college set up catering predominantly rural population in Chhattisgarh, India.

To study incidences of opinion needed in different diagnosis & various laparoscopic surgeries.

Material & Methods

This study was conducted at Department of Obstetrics & Gynaecology at Chandulal Memorial Medical College & Hospital (CMMCH) Durg Chhattisgarh, India from 1st January 2014 to 15 July 2014. The author of the study opened a group on WhatsApp and named it Laparoscopic Platform (Table No 1). All Senior Residents, Assistant Professors, Associate Professors of CMMCH and other senior laparoscopic surgeons outside the college were included in the group. The treating team used smart phones and its WhatsApp application as a communication method with the laparoscopic experts in cases with difficult presentation: 1) intraoperatively 2) postoperatively & 3) for further planning with prompt feedback. On joining the group, all the doctors of CMMCH were instructed to endorse the patients pre-operative, intra-operative and post-operative photographs/ videos for documentation and planning. Whats App 2.9 **[8]** was first installed on more than one Android phone using the Google Play store. There were total 16 members in the group including 9 from outside. Information about active participants is given in table no.1. Any untoward incident of patient and its management was always uploaded. All members of the group were strictly advised that at all stage of information sharing patient identity should remain confidential but information, which was uploaded was sufficient to know exactly about which patient conversation is going on such as ward number, bed number, procedure done. At our institute informed consent was taken from all patients for taking photographs and sharing of the image with other members of the team. As all patient information was confidential there were no adverse medicolegal aspects of this tool.

Table No. 1 Shows: Active Participant On Smartphone WhatsApp

S. NO	NAME	AGE (in Yrs)	M/ F	JOB	JOINED (2014)
P1	Dr. RR	47	F	Associate Professor CM-MCH Durg	Jan
P2	Dr. PG	31	F	Senior Resident, CM-MCH Durg	Jan
P3	Dr. MG	35	F	Assitant Professor, CM-MCH Durg	Jan
P4	Dr. AC	50	F	Assitant Professor, CM-MCH Durg	Jan
P5	Dr. AT	27	F	Senior Resident, CM-MCH Durg	May
P6	Dr. TN	40	M	Assitant Professor, CM-MCH Durg	Jan
P7	Dr. MK	42	M	Assitant Professor, CM-MCH Durg	Jan
P8	Dr. MC	42	M	Director Ayush IVF Centre	Jan
P9	Dr. PA	40	F	Associate Professor JNM Raipur Medical College.	Jan
P10	Dr. RA	40	M	Director Arogya Advanced Laparocopy Centre & IVF Centre	Feb
P11	Dr. NK	46	F	Director Kanwar Hospital & IVF Centre	Feb
P12	Dr. NP	38	M	Director Raipur IVF Centre	Feb
P13	Dr. TK	36	F	Director Jubesta Hospital and Advanced Laparoscopy Centre	Jan
P14	Dr. JJ	40	M	Associate Professor Pt. JNM Raipur Medical College	Feb
P15	Dr. NM	41	M	Associate Professor Jorhat Medical College, Assam	Jan
P16	Dr. SV	46	M	Professor & Head Bhopal Memorial Hospital.	Jan

Results:

Table No. 2 Showing Incidence of Experts Opinion Needed

Total no. of laparoscopic surgeries	No. of incidences required experts opinion	Percentage
50 cases	22 cases	44%

Table – 3 shows %age Of Opinion Needed In Various Diagnosis

Diagnosis	Total No. of pts (N=50)	Opinion taken (N=22)	Percentage
Primary infertility (PI)	15	07	31.82%
Secondary infertility (SI)	03	01	4.55%
Chronic pelvic pain (CPP)	10	04	18.18%
Symptomatic fibroid uterus (SFU)	07	04	18.18%
PID	05	02	9.09%
TO mass	02	01	4.55%
RPL in 2nd trimester	01	01	4.55%
Severe dysmenorrheal (SD)	01	01	4.55%
Chronic cervicitis (CC)	03	00	0%
DUB with stage I prolapse (DUBWP)	01	01	4.55%
Stage II prolapse (SIIP)	01	00	0%
Wants LTT	01	00	0%

Table No. 4: Showing %age Of Needed Opinion In Different Gynaecological Surgeries

Procedures done	Total No. of pts (N=50)	Opinion taken (N=22)	Percentage
Diagnostic laparoscopy (DL)	12	04	31.82%
Diagnostic laparoscopy with adhesiolysis (DLWA)	06	03	13.64%
Diagnostic laparoscopy with chromopertubation (DLWC)	14	06	27.27%
Laparoscopic myomectomy (LM)	02	02	9.10%
Diagnostic laparoscopy with chromopertubation with paratubal cystectomy (DLWCWPC)	01	01	4.55%
Diagnostic laparoscopy with chromopertubation with ovarian drilling (DLWCWOD)	03	01	4.55%
Diagnostic laparoscopy f/b TAH (DLf/bTAH)	01	01	4.55%
LAVH	07	03	13.64%
TLH	03	01	4.55%
LTT	01	00	0%

Table 5: Shows Opinion needed during phases of surgery

Phases	Intra-operative phase (N=22)	Post- operative phase (N=22)	Further feedback (N=22)
Opinion required for number of cases	16	10	18
Minimum time to get opinion	Within 2 minute	Within half hour	Within 1wk
Maximum time to get opinion	Upto 10 minutes	Upto 7 hours	Upto till now (as a follow up opinion/ discussion of the pts)

During the study period there were 50 gynaecological laparoscopic surgeries performed and out of these, there were 22 such cases (44%) in which the team thought of taking second opinion and 44 such events of taking the opinions; 16 during intraoperative phase, 10 during post operative phase and further feedback during follow ups 18 events. The minimum and maximum time required respectively to get these opinions was noted as 2 minutes and 10 minutes for intraoperative phase, 30 minutes and 180 minutes for post operative phase and further feedback post surgeries ranged from 1 week and the discussion continued till most days of the follow ups. Most opinions were sought for pts with diagnosis of Primary infertility (n-7; 31.82%); followed by Chronic pelvic pain (CPP) & Symptomatic fibroid uterus (SFU) 18.18% and PID 9.09%. The cases with Secondary infertility (SI), TO mass, RPL and Severe dysmenorrheal (SD),DUB with stage I prolapse also needed expert opinion each 4.55%.

Taking into account the surgical procedure perspective, out of these 22 cases, maximum opinion was needed in Diagnostic laparoscopy with chromopertubation [06 cases;(27.27%)] followed by diagnostic laparoscopy [04 cases; (18.18%)], Diagnostic laparoscopy with adhesiolysis [03 cases ;(13.64%)], LAVH [03 cases; (13.64%)], laparoscopic myomectomy [02 cases (09.09%)], Diagnostic laparoscopy with chromopertubation with paratubal cystectomy [01 case (4.55%)], Diagnostic laparoscopy with chromopertubation with ovarian drilling [01 case (4.55%)], Diagnostic laparoscopy f/b TAH [01 case (4.55%)], TLH [01 case (4.55%)].

Discussion:

With the advancement in the means of communication, the present day smartphones have superseded the earlier methods in the usual day to day life. Especially in the medical field this mode of communication through smartphones and whatsapp is gaining popularity for enhancing knowledge and better patient care as studies have highlighted that patients are subject to significant harm because of poor communication. In the surgery settings including gynaecological surgeries, as the on table presentation in operation theatre often poses challenges to arrive at proper plan of management, the timely decision making giving clear view of the pathological state of the pa-

tients, appropriate clinical decision consulting senior consultants can be of great help. If the team is to function well and avoid clinical incidents they must be able to communicate swiftly and clearly at all times.

Related studies were seen in the orthopaedic, plastic surgery and psychiatty set up [9], [10], [11], and this appears to be the first in gynaecology set up of our institute.

In the study in psychiatry, WhatsApp was studied to be an efficient tool for developing clinical work and teaching task and evaluating various options for dealing with a patient. In the emergency setting of surgery, whatsApp was also found to be significant tool in discussing plan of managements and taking clinical decisions related to the patient care. Our study in addition to the patient benefits in postoperative states and follow-ups, went a step further in discussing the intraoperative presentations with experts and arriving at proper plan of management in no time. This has saved important time in arriving at the clinical judgement or the patient care. Our study found whatsApp to be efficient mode of communication where quick and expert decisions regarding the difficult presentations during the procedures were possible. The delay in providing efficient care was overcome thereby minimizing the complications that could have occurred due to inadequate or improper procedure. The timing of the presentation of first signs complications plays an important role in outcome of any surgical procedure including laparoscopic surgery. Our WhatsApp method of communication reduced the time interval between the first recognition of any complication and starting the management intraoperatively, postoperatively & for further planning with prompt feedback. Before we started this method of communication at our division, we were using telephone call system to communicate with each other. This was only verbal communication and one-to-one contact. The redundant steps of vertical reporting system were eliminated by real time WhatsApp chat.





Conclusion

WhatsApp appears to be an efficient mode of communication in gynaecoloy laparoscopic surgery set up. Our study found whatsApp to be efficient mode of communication where quick and expert decisions regarding the difficult presentations during the procedures were possible. Our WhatsApp method of communication reduced the time interval between the first recognition of any complication and starting the management intraoperatively, postoperatively & for further planning with prompt feedback.

Recommendation

Use of smartphones can be recommended not only for gynaecological laparoscopic surgeries but also for all other laparoscopic surgeries, difficult abdominal and vaginal surgeries, diagnosing OPD pts & carrying out procedures etc. for best diagnosis and management.

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