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Research Paper

Non – Participant Observational Study on "Communication Overload" on Clinical Staff Working in Emergency Department of Nims

Medical Science

KEYWORDS : Communication styles and barriers, workload, interruptions

Dr. N. Lakshmi Bhaskar	Assistant Professor (Selection Grade), Department of Hospital Administration, Nizam's Institute of Medical Sciences
Dr. K.T. Reddy	Additional Professor, Department of Hospital Administration, Nizam's Institute of Medical Sciences
Dr. S. Naga Satish Kumar	Senior Resident, Department of Hospital Administration, Nizam's Institute of Medical Sciences

ABSTRACT

The impact of poor Communication on clinical work suggests that Communication overload is a likely cause of systematic error in the Health System. The aim of this study was to determine whether there are differences in role-related communication patterns, so we measured communication load precisely and studied communication patterns in a high work load setting like an Emergency Department, to identify whether specific clinical roles are particularly at risk of high communication loads. This Non-Participant observational study evaluated the communication patterns and communication loads among, Medical Officers, Resident physicians, in- charge nurses, and staff nurses. Individuals with greater authority for overall ED operation experienced a higher communication load and higher communication Interruption rate. Overall, up to one third of all communication time was spent with communication interruption. In conclusion, in a complex environment such as the ED, understanding communication patterns and the needs of the different clinical roles is an important prerequisite for improving ED communication processes and practices.

INTRODUCTION:

Communication failures in the health system have been reported to be a larger contributor to preventable adverse clinical outcomes. Studies on Emergency Department(ED) have demonstrated that in situations in which individuals carry out multiple concurrent tasks clinical Staff experience high communication loads.[1] Interruptions on the other hand are seen as a source of concern because they may negatively affect clinical Staff's working memory and lead to errors. ED clinical Staff has been identified as being particularly at risk of communication overload, with reports showing that they may spend up to 80% of their time in communication.[2, 3, 4]

The research work done in the United Kingdom in the mid-1990s in which it reported was that physician teams in hospital were subject to high levels of interruption.[5, 6, 7] Clinical staff also appeared to bear a higher communication load than necessary, considering the many tasks that could be accomplished by accessing information sources rather than asking questions of people. It has since been hypothesized that such interruptions impose cognitive loads on clinical staff and have a negative impact on memory, leading to clinical error.

If communication loads are associated with specific work patterns, then one would expect load to vary with clinical roles. It has been hypothesized that interruptions impose cognitive loads on clinical staff, leading to clinical error. Specifically, when an individual's working memory is occupied with several items, an interruption may disrupt working memory, resulting in forgetting some items. Communication load is a measure of the impact of organizational process on individuals and indicates under which circumstances cognitive resources are likely to be stretched.[8]

The study setting is Nizam's Institute of Medical Sciences, a well-known tertiary care teaching hospital in Telangana, India. Being an apex institute, the institute not only cadres to population of states od Telangana and Andhra Pradesh, but also to major portion of population in surrounding states. Emergency department is always busy and many a times, it has been mentioned as overcrowded. This leads to disparity in doctor patient ratio, which had led to not only work overload, but also communication overloads. So, the present study aimed, to determine whether there are differences in role-related communication patterns in an ED and to identify whether specific clinical roles are particularly at risk of high communication loads, because communication overload may predispose clinical staff to making errors.

OBJECTIVES OF THE STUDY:

- To describe Communication Events.
- To Measure communication load on clinical staff.
- To determine whether there are differences in role-related Communication patterns in the emergency department

OPERATIONAL DEFINITIONS:

- For better understanding of the study pattern, following operational definitions were adopted for the study.
- Communication event: Consists of a set of messages between a sending party and 1 or more receiving parties for a purpose through a communication channel
- Interruption: A communication event in which the subject did not initiate the conversation.
- Communication multitasking: A period when two or more concurrent communication events occurred
- Patient management: Activities related to patient care, divided into direct patient care (ex: assisting patients with activities of daily living, giving medication, providing explanations to patients and their relatives)
- Ward management: Activities related to running the ward (ex: bed allocation, rosters, coordinating staff activities)
- Social: Exchanges that are not directly work related.
- Synchronous communication: When two parties exchange messages across a communication channel at the same time (ex: in person or by telephone)
- Asynchronous communication: When communication exchange does not require both parties to be active in the conversation at the same time (ex: writing or receiving e-mail)

METHODOLOGY:

The study design adopted was cross sectional study. This was a Non participant observational study conducted in Emergency Department of the institute. Study population were four emergency medical officers (Casualty Medical Officer, Duty Medical Officer, Senior Resident and Junior Resident) and 4 nurses of different grades (I/C Nurse, Head Nurse, Senior Nurse, Junior Nurse). They were observed for 19 hours and 52 minutes.

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The Non-Participant Communication Observation Method was used to measure communication loads, measured by the proportion of observed time spent in communication, the proportion of communication events involving concurrent communication tasks, and the proportion of interruptions experienced by subjects. Participants of study population were observed from a distance during the morning, afternoon, or night Shifts, while timing of events were noted.

Patterns of communication were examined by classifying communication event attributes, such as the purpose of communication, the parties involved in communication, and the channel of communication. Communication load was measured as the time spent in communication, the time involved in communication multitasking, and the number of interruptions.

RESULTS:

Eight hundred thirty-one communication events were identified, an average of 42 events per person per hour. Eighty-nine percent of clinical staffs' time was spent in communication. Synchronous communication channels, involving face-to-face or telephone conversations, were used in 83.4% of events. One third of communication events were classified as interruptions, averaging 15 interruptions per person per hour. Senior medical and nursing staff experienced higher rates of interruption than junior medical staff and nurses with patient load.

Total study observation time was 19 hours 52 minutes, in which 831 distinct communication events were identified, an average of 42 events per person per hour. Eighty-nine percent of clinical staffs' time was spent in communication events, with synchronous communication channels used in 84% of events. One third of events were classified as interruptions, giving an average rate of 15 interruptions per person per hour, as summarized in table 1.

Medical Officers spent the greatest amount of time (average56%) and the Residents least amount of time (average 23.5%) in interruptions. Although the Nurses of higher grade experienced high rates of interruptions, the brevity of these interruptions for each event (38 seconds) meant that on average they spent less time dealing with Interruptions than Medical Officers. On average, the participants spent 10% of communication time carrying out two or more overlapping conversations (communication multitasking), with one of the Medical officers involved in communication multitasking events for 17% of the observed time.

Clinical staff used Channels of communication, such as face-to-face communication and the telephone, more frequently than channels, such as the medical record or request forms writing. Face-to-face communication was the most commonly used. Medical Officers and In- charge Nurse and Senior Nurses experienced the highest rates of telephone calls per hour. The Medical officers spent the greatest amount of time communicating by telephone (14%), nearly twice that of the senior nurses (8%). Residents spent 4% of their time in telephone calls, and nurses with patient load spent 1%. (Table 2) The majority of interruptions were due to face-to-face conversations. In- charge Nurse, Head Nurse and the Medical officers experienced more than double the interruptions because of telephone calls compared with the Junior Nurses with patient load and the junior Residents. Within each clinical role, patient management was the primary reason for communication, representing an average of 59% of all events and 71% of total event time.

TABLE – 1: Time Spent on communication:

Communication Event Types (HH:MM:SS)	CMO	DMO	SR	JR	I/C Nurse	Head Nurse	Senior Nurse	Junior Nurse	Total or Average
No. of Communication Events (CE)	61	55	93	93	65	135	159	170	831
Total observation Time	1:10	1:08	3:21	3:04	2:13	3:31	2:51	2:34	19:52*
Total CE Time	1:01	1:03	3:09	2:45	1:47	3:02	2:20	2:32	17:40*
Time in CE %	88	94	94	90	81	86	81	99	89
No. of interruptions	32	22	22	31	23	30	64	71	295
Time in interruptions	0:29:10	0:19:22	0:32:39	0:27:19	0:20:22	0:41:00	0:31:38	0:53:48	4:15:00
Time in interruption %	42	28	16	15	15	19	18	35	24
Communication Time multitasking %	8	17	14	5	8	11	5	11	10

True totals when rounding taken into account. Each communication event could involve more than one purpose classification, so some proportions sum to greater than 100%.

TABLE – 2: Purpose / Channel of communication event:

Purpose / Channel of Communication Event	CMO	DMO	SR	JR	I/C Nurse	Head Nurse	Senior Nurse	Junior Nurse
Face to face %	85	84	75	77	88	87	82	89
Patient Management %	5	22	46	38	5	6	36	26
Ward Management %	46	67	54	55	36	26	42	49
Telephone %	20	8	6	2	9	7	1	1
Record writing %	7	11	17	13	19	18	9	2
Patient Relatives %	42	4	18	13	6	5	34	13
Social %	5	4	4	2	14	8	8	7

Figure – 1: Communication Events among Doctors.

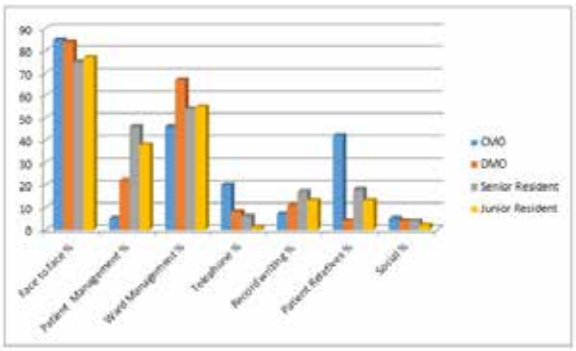


Figure – 2: Communication Events among Nurses

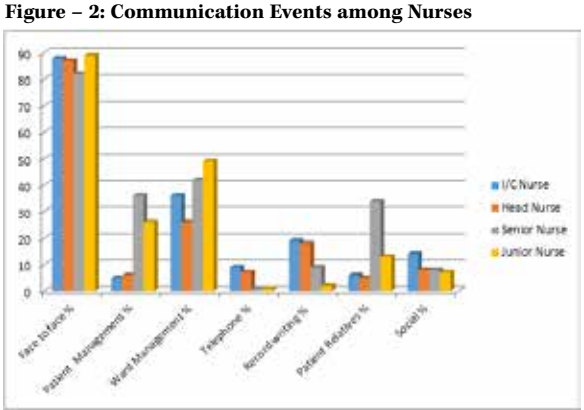
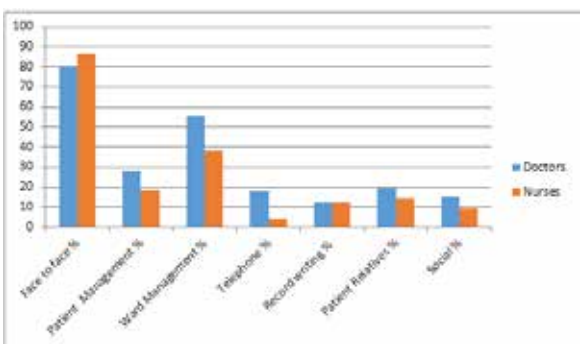


Figure – 3: Average Communication Events – Comparisons between Doctors and Nurses



Face-to-face communication was the dominant channel for all tasks. Indirect patient management such as ward Management was the most frequent reason for interruptions (Nurses with patient load (Sr. & Jr. Nurses, 45.5%; In- charge Nurse, Head Nurse, 31%; Sr. & Jr. Residents, 54.5%; the Medical officers 56.5%). Nurses with patient load experienced the highest proportion of interruptions related to direct patient management (28%). The In-charge Nurse, Head Nurse and the Medical officers experienced similar proportions of interruptions for Record Writing (18.5% and 9%, respectively).

DISCUSSION:

There was considerable variation in communication loads on clinical staff occupying different roles in the Emergency Department. Medical officers had a high proportion of interruptions and spent most of the time dealing with interruptions. Interruptions are an important measure of communication load, as an interruption can disrupt memory and generate errors. The level of multitasking is also of concern, as it too may affect memory. The number of items that can be held in memory is very small and several concurrent tasks may overload memory. The combination of multitasking and interruption may be a potent cocktail and a potential source of error.

Clinical staff within the ED need to respond quickly and appropriately to circumstances, and the choice of communication channel will be influenced by the purpose and urgency of the message being communicated. High rates of interruptions shown in the observational data are directly related to the preference of the clinical staff for synchronous communication channels, which by definition requires the attention of both parties simultaneously. Building an awareness of the effect of synchronous communication on team functioning may help individuals decide whether synchronous communication is appropriate to the circumstances.

The picture of communication within the emergency department suggests that communication processes dominate information exchanges, and that communication may be strained because of the communication loads on individual clinical staff. It suggests that active training to improve team communication, as well as optimization of communication processes, have the potential to substantially improve clinical work, and may have a positive impact on clinical outcomes.

RECOMMENDATIONS:

The study suggests specific communication training in emergency departments, operating rooms, and other high-interaction workplaces. Specific strategies to reduce interruptions include:

Education to increase awareness of the costs of interruption;

Increased use of asynchronous communication tools like email and voicemail;

Communal communication tools such as message boards, which are well suited to the emergency department setting, as staff are mostly physically collocated. More positively, it suggests that small improvements in communication may substantially benefit information processes within organizations, potentially providing greater benefits.

CONCLUSION:

The study clearly establishes the pattern of communication events that occur with various healthcare professional and the modes of various communication interruptions. This can affect patient history taking and communication, and may lead to poorer patient outcomes and satisfaction. Training of staff in emergency department help to alleviate the problems that arise during communication overload, resulting in better quality of patient care improving healthcare outcomes.

SUGGESTION:

Further research is needed to replicate these findings in other clinical settings, with a view to ensure that communication processes are considered in any program to reduce error and improve the quality and safety of healthcare delivery. It could be easily noted that Doctors had higher interruptions in comparison to nurses.

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REFERENCE

1. Wilson R, Runciman W, Gibberd R, et al. The Quality in Australian Health Care study. Med J Aust. 1995;163:458-471 | 2. Coiera E, Tombs V. Communication behaviours in a hospital setting: an observational study. BMJ. 1998;316:673-676. | 3. Parker J, Coiera E. Improving clinical communication: a view from psychology. JAm Med Informatics Assoc. 2000;7:453-461 | 4. Coiera E. When conversation is better than computation. J Am Med Informatics Assoc. 2000;7:277-286. | 5. Covell DG, Uman GC, Manning PR. Information needs in office practice: are they being met? Ann Intern Med. 1985;103:596-599. | 6. Patel VL, Cytryn KN, Shortliffe EH, et al. The Collaborative Health Care Team: the role of individual and group expertise. Teach Learn Med. 2000;12:117-132. | 7. Gosbee J. Communication among health professionals.BMJ 1998; 316: 642. | 8. Chisholm C, Collison K, Nelson D, Cordell W. Emergency Department workplace interruptions. Acad. Emerg. Med. 2000; 7: 1239-1243. | 9. Williams KA, Rose WD, Simon R. Teamwork in Emergency Medical Services. Air Med J 1999; 18:149-153. |