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Use of Text Messages (SMSs) as a Communication Channel to Improve the Compliance of Acts/Rules/Orders Applicable in Hospitals

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Abstract

The use of technology by the hospital administrator for information, education and communication can help as a controlled framework for updating, authorizing and communicating the required information to the stakeholders in an organization and ensuring proper dissemination of information regarding acts/rules/issues applicable to hospitals.

Study provides a gateway to the technology in the field of hospital administration with the sole purpose to improve the functioning of the departments in compliance with the orders/policies/acts of GOI.

Key words

Communication, Technology, Impact

Introduction

Hospital Administration plays a vital role in the success of any healthcare institution. The members of the department of Hospital Administration acquire the art and the skill to manage various hospital services. The administration's crucial role is to co-ordinate with all the stakeholders and address their specific needs with an overall focus on the patient care.

One of the most important aspects of a hospital administrator is implementing the rules/acts/issues applicable to hospitals as per the government rules/acts.

The administration has to ensure organizational compliance with medical, legal and internal policies.

In the recent times, Government of India has taken many initiatives through different schemes like Kayakalp and Mera Aspataal for better sanitation, promote hygiene, bring a positive behavioural change among the hospital staff, and increase the patient satisfaction.

The use of technology by the hospital administrator for information, education and communication can help as a controlled framework for updating,authorizing and communicating the required information to the stakeholders in an organization and ensuring proper dissemination of information regarding acts/rules/issues applicable to hospitals.

Reinforcing important messages helps to spread and soak in critical knowledge. Reinforcing the issues through repeated messages at regular intervals on important rules/acts/issuescan leadto conditioning so that the staffs is aware about the provisions and are able to communicate with others involved in the patient care to better healthcare management issues. However, little is known about the usefulness of dissemination of such information by using the technology, like sending messages through the short message services. In this background this study aims to evaluate the usefulness of sending the IEC (Information, Education and Communication) information through Closed User Group (CUG) text messages to reinforce important issues/acts/rules of GOI to improve their performance/ compliance in the hospital.

Methodology

It was a questionnaire-based study, carried over one year from October 2019 to September 2020, at PGIMER, Chandigarh.

CUG Group (Closed User Group) contains the crucial official contact numbers provided by the Institute. It was framed with the purpose to disseminate important information concerning the hospital. It is a platform to easily and quickly spread any vital information/circular/ orders/news/awareness to the health care staff and officials.

The study sample included members of the CUG group. The CUG group includes 40 Head of the departments, 250 faculty members, 20 hospital officers and 10 resident doctors from the department of Hospital Administration.

Initially, 30 issues were taken up by the administration to prepare messages, but these were later decreased in a phased manner due to various reasons by the internal committee. The issues which were removed were those not controlled by the department of Hospital Administration directly. Other reason was to avoid over loading the receiver with too many issues at the same time. To remove monotony and keep the attention to vital issues , later ten issues were taken up to frame messages and disseminate the same for compliance through the CUG group.In total, 10 Text messages were framed, which addressed following the following: **Biomedical Waste Management, Solid Waste Management, Mera Aspataal, Kayakalp, Ayushman Bharat, Government e Marketplace (GeM), Fire, Pre-Conception and Pre-Natal Diagnostic Techniques (PCPNDT Act) , Anti-smoking, Single-Use Plastic (SUP) And Polythene bags**. The messages' content were framed so that they remind the receiver about the importance of the issues/acts/rules and solicit their cooperation in implementing them in their respective areas. The text messages were initially sent for the first three days (i.e. Monday, Tuesday, and Wednesday) of every week for two months, followed

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by fortnightly for the next two months and then monthly after that. A standardized closed-end Questionnaire was prepared on a likert scale and vetted by a team comprising of two Senior Professors and two Associate Professors. Questionnaire was distributed amongst the target population to obtain the feedback to evaluate the compliance to these messages. Questionnaire forms were distributed physically amongst the target group. Also, the same questionnaire was framed in the google form and sent electronically to all concerned. The respondent were asked to respond to the questionnaire by maintaining their anonymity. Repeated reminders were given at regular intervals via mail to solicit their response. Out of the total 320 people, 120responded to the survey. An excel sheet was prepared and the data was analyzed by using appropriate software.

Result

In total 120 responses were received. Amongst them 20 were HODs, 70 were faculty, 20 were Hospital Officers and 10 were Hospital Administration Residents. About one-third (36.7%) of the participants reported that they received the messages four times, and slightly less than one-third (30%) reported to have received the messages more than eight times. Nearly half (49.2%) of the participants reported that they were aware about the issues flagged through messages. About two-third (64.2%) of the participants reported to have read the messages and passed the required information on to other staff, Slightly less than half (45.8%) of the respondents found the messages to be very helpful and additionally slightly more than one-fourth (28.3%) found the messages to be very much helpful,. Nearly half (49.2%) of the respondents considered the content of the messages to be clear. Similarly, half (50.8%) of the respondents reported that the it was easy to implement the issue raised in the messages (Table-1)..

Half (53.3%) of the respondents, agreed that the messages helped them change the knowledge, skills and behaviour of the staff working under them. After receiving the message on 'MeraAspataal', 42.5% reported that they were 'well aware', and another 40.8% reported that they were 'very well aware'. More than half (56.7%) of the participants were satisfied with the doctors' behaviours with the patientsand 61.7% were satisfied by the behaviour of nurses, 58.3% were satisfied with the behaviour of the technical staff's, and 59.2% were satisfied with the behaviour of non-technical staff's. Amongst the respondents, 33.3% of the staff was very much motivated, followed by 23.3% somewhat motivated to improve the behaviour of staff to improve the requirements as desired under MeraAspataal. . The majority of the participants reported that43.3%, of the staff were moderately motivated to improve their behaviour. Majority of the participants reported that they were 'well aware (47.5%)' or 'very well aware (38.3%)' were aware about the Biomedical Waste Management Rules 2016. The knowledge about segregating the solid waste was seen in almost all participants. About two-third (66.7%) of the participants were satisfied with the biomedical waste segregation.

Only 40.8% of the participants reported that they were 'very well'aware of the criteria of the Kayakalp assessment and 80% of the participants strongly agreed to the team efforts required to achieve the best assessment under Kayakalp. The maximum percentage of respondents were 'very well' aware about the GeM 60% and 35.8% were 'well aware'. More than one-third (39.2%) reported to be always using GeM platform to make the departmental purchases and

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additional 43.3% reported often using the GeM platform.

Majority of the participants reported to be very well aware (46.7%)/ well aware (36.7%) about the cigarettes and other tobacco products Act, 2003. About two-third (66.7%) of the respondents reported that they gave reminders to the patients and attendants and the staff not to smoke in the hospital. About half (50.8%) of the respondents were aware of the penalty for smoking in the PGIMER, Chandigarh. Similarly, half (50.8%) were well aware of various elements of Ayushman Bharat. Around 47.5% rated the efforts to prevent fire in respective areas as very good, followed by 34.2% as excellent. About two-fifth (40%) of the participants reported that they did not experience any fire incidence in their areas, and 55.8% reported fire incidence of upto two-times in the past two years. Nearly half (54.2%) of the participants were very well aware of fire fighting equipment, and 57.5% were very well aware of the messages received by them to switch off the electrical gadgets. It was seen that monthly reminders sent to departments to submit the PCPNDT report were found very helpful by 30.8% and very much helpful by 28.3% of the responders. Majority (87.5%) of the participants considered the importance of eliminating Single-Use Plastic (SUP) as very much necessary. Around half (47.5%) of the participants were very well aware and another 40% were aware of items banned under SUP. Helpfulness of the messages to improve knowledge, skill, and behaviour and motivate them were reported to be very helpful by 43.4%, and very much helpful by 35% of the participants.

Table I. Result of the study

Sr. No.	Question Asked	Frequency (%)
1.	**Frequency of receiving the messages**	
No. of Times	4 Times	44 (36.7)
	5 Times	07 (5.8)
	6 Times	15 (12.5)
	7 Times	18 (15)
	>8 Times	36 (30)
2.	**Awareness on the issues on which messages were flagged**	
Level of Awareness	Slightly aware	17 (14.2)
	Well aware	44 (36.7)
	Very well aware	59 (49.2)
3.	**Response of the respondents when they received the messages**	
Action	Read message and forget about it.	19 (15.8)
	Read message and forward it.	24 (20)
	Read message and pass to other staff	77 (64.2)
4.	**No. of Respondents who found the messages helpful**	
Response	Somewhat helpful	31 (25.8)
	Very helpful	55 (45.8)
	Very much helpful	34 (28.3)
5.	**Rate the content of the messages in term of implementing the issue**	
Response	Neutral	15 (12.5)
	Clear	59 (49.2)
	Very Clear	46 (38.3)
6.	**Difficulty in implementing the concerning issues in the messages**	
Response	Neutral	40 (33.3)
	Easy	61 (50.8)
	Very Easy	19 (15.8)
7.	**Helpfulness of the messages to change the knowledge, skill, behaviour of the staff working under them**	
Response	Neutral	31 (25.8)
	Agree	64 (53.3)
	Strongly Agree	25 (20.8)
8(A).	**Awareness of Mera Aspataal, a program by GOI after receiving the messages**	
Response	Somewhat aware	20 (16.7)
	Well aware	51 (42.5)
	Very well aware	49 (40.8)
8(B).	**Satisfaction with the behaviour of doctors with the patients under Mera Aspataal**	
Response	Neutral	40 (33.3)
	Satisfied	68 (56.7)
	Highly Satisfied	12 (10)
8(C).	**Satisfaction with the behaviour of nurses with the patients under Mera Aspataal**	

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Response	Neutral	36 (30)
	Satisfied	74 (61.7)
	Highly Satisfied	10 (8.3)
8(D).	**Satisfaction with the behaviour of Technical staff with the patients under Mera Aspataal**	
Response	Neutral	37 (30.8)
	Satisfied	70 (58.3)
	Highly satisfied	13 (10.8)
8(E).	**Satisfaction with the behaviour of Non- Technical staff with the patients under Mera Aspataal**	
Response	Neutral	38 (31.7)
	Satisfied	71 (59.2)
	Highly Satisfied	11 (9.2)
8(F).	**Motivation of staff to improve upon their behaviour in order to improve under Mera Aspataal**	
Response	Somewhat Motivated	28 (23.3)
	Moderately Motivated	52 (43.3)
	Very Much Motivated	40 (33.3)
9(A).	**Awareness of the new category of Biomedical Waste (BMW) Management Rules 2016**	
Response	Somewhat aware	17 (14.2)
	Well aware	57 (47.5)
	Very well aware	46 (38.3)
9(B).	**Solid waste segregation into dry and wet waste**	
Response	Neutral	08 (6.7)
	Agree	61 (50.8)
	Strongly Agree	51 (42.5)
9(C).	**Satisfaction with the biomedical waste segregation**	
Response	Neutral	11 (9.2)
	Satisfied	80 (66.7)
	Highly satisfied	29 (24.2)
10(A).	**Awareness of criteria under which Kaya kalp assessment is done**	
Response	Slightly aware	03 (2.5)
	Somewhat aware	25 (20.8)
	Well aware	43 (35.8)
	Very well aware	49 (40.8)
10(B).	**Team efforts required to achieve best assessment under Kaya kalp**	
Response	Neutral	02 (1.7)
	Agree	22 (18.3)
	Strongly Agree	96 (80)
11(A).	**Awareness of GOI purchasing site Government-e-Marketplace (GeM)**	
	Somewhat aware	05 (4.2)
Response	Well aware	43 (35.8)
	Very well aware	72 (60)
11(B).	**Departmental purchases through GeM**	
Response	Sometimes	21 (15.5)
	Often	52 (43.3)
	Always	47 (39.2)
12(A).	**Awareness of cigarettes and Other Tobacco Products Act,2003 (COTPA)**	
Response	Somewhat aware	20 (16.7)
	Well aware	44 (36.7)
	Very well aware	56 (46.7)
12(B).	**Reminder given by respondents to the patients, their attendants and the staff not to smoke in the hospital**	
Response	Sometimes	11 (9.2)
	Often	29 (24.2)
	Always	80 (66.7)
12(C).	**Penalty for smoking in PGIMER**	
Response	Rs 50	02 (1.7)
	Rs 100	04 (3.3)
	Rs 200	61 (50.8)
	Rs 500	40 (33.3)
	Rs 600	01 (0.8)
	Not Replied	12 (10)
13(A).	**Awareness on various elements of Ayushman Bharat**	
Response	Somewhat aware	30 (25)
	Well aware	61 (50.8)
	Very well Aware	29 (24.2)
13(B).	**Rating of departmental performance for patients covered under Ayushman Bharat**	
Response	Neutral	17 (14.2)
	Satisfied	74 (61.7)
	Highly Satisfied	29 (24.2)
14(A).	**Rating the efforts taken to prevent fire in respective areas**	
Response	Good	22 (18.3)
	Very Good	57 (47.5)
	Excellent	41 (34.2)
14(B).	**Incidence of fire in respective areas in past 2 years**	
Response	Upto 2 times	67 (55.8)
	Upto 3 times	04 (3.3)
	Upto 4 times	02 (1.7)
	Upto 5 times	03 (2.5)
	>5 times	04 (3.3)
	No fire	40 (33.4)
14(C).	**Awareness on messages sent related to the switching off the electrical gadgets after use**	

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Response	Somewhat aware	07 (5.8)
	Well aware	44 (36.7)
	Very well aware	69 (57.5)
14(D).	**Awareness on fire fighting equipments in respective areas**	
Response	Somewhat aware	12 (10.0)
	Well aware	43 (35.8)
	Very well aware	65 (54.2)
15.	**Helpfulness of monthly reminders sent to user departments to submit PCPNDT report**	
Response	Somewhat helpful	09 (7.5)
	Very helpful	37 (30.8)
	Very much helpful	34 (28.3)
	Not Applicable	40 (33.4)
16(A).	**Awareness on various items banned under Single Use Plastic**	
Response	Somewhat aware	15 (12.5)
	Well aware	48 (40.0)
	Very well aware	57 (47.5)
16(B).	**Importance of eliminating Single Use Plastic from PGIMER campus**	
Response	Moderately Important	02 (1.7)
	Important	13 (10.8)
	Very much Important	105(87.5)
17.	**Helpfulness of the messages to improve Knowledge, skill and behaviour of the staff and motivate them**	
Response	Somewhat helpful	26 (21.6)
	Very helpful	52 (43.4)
	Very much helpful	42 (35.0)

Table 2. Suggestions

	Option	No. of responses	Total percentage
Administration to improve knowledge,skill and attitude of staff with regard to GOI acts/rules/policies/orders etc. to improve their compliance	Training	25 (21%)	21
	Use other modes i.e multimedia messages and whats App	11	9.2
	Strict supervision	7	5.9
	Covering more staff numbers under CUG	6	5
	Incentives to staff	2.5	3
Improve compliance of the messages	Training classes	20	16.8
	Use of other modes like multimedia ,whats App, emails etc.	16	13.4
	Taking frequent feedback	13	10.9
	Awarding	12	10.1
	More meetings	10	8.4

In terms of suggestions to improve the communication, 21% of the respondents, suggested using more and more training programme to impart skills, knowledge and attitude to the staff concerning GOI acts/rules/policies/orders to improve their compliance. Other modes, i.e. multimedia messages, Whats App, e-mail, were suggested by one-tenth (9.2%) of the respondents. Other suggestions included strict supervision (5.9%) followed by expansion of the CUG group (5%) and incentives to staff (3%). Around 16.8% of respondents emphasized that the compliance of messages can be improved by adding virtual and physical training. Also, other responses for improving the compliance were to award the employees(10.1%), taking frequent feedback(10.9%) and more meetings on the issues/order/policies of GOI i.e.8.4%.

Discussion

As the study focuses on the use of text messages to reinforce important issues/acts/rules of India's government to improve their compliance in the

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hospital, it is a new initiative and a new study of its kind in hospital administration. Many clinical studies have been done in which the use of text message via cell phone have been used to improve patient health by giving them health reminders. A study done by MandanaGadaffi et al. recommends using SMS via mobile phones in the management of type 2 diabetes mellitus. Healthcare providers use the technology for the benefits of their patients. Similarly, healthcare administrators can use mobile phone intervention through SMSs to reinforce issues/acts/rules of GOI to improve their compliance in the hospitals. IEC activity's strategic framework by sending text messages creates more awareness and easy dissemination of information in a cost-effective manner.

In a study by Heather Cole-Lewis and Trace Kelshaw, text messages were used as a useful tool for behaviour change in managing disease and its prevention. In many studies, it is evident that text messages are a powerful tool as an intervention for change in behaviour. Currently, the issues/acts on which awareness needed have been taken care of. The helpfulness of these messages to improve the overall behaviour and their compliance is evident from the study. The reminder and periodic message benefit are evident in interventions for health behaviour. The use of cost-effective technology to disseminate information to hospital staff and make them more aware and sensitize towards GOI policies proves to be beneficial. The concept of groups where the respondents use mobile phones given by the Institute makes them accountable as reinforcement of GOI policies/acts/rules is done from time to time. The research also supports creating different groups so that more and more population can be covered at a single click rather than sending the individual message.

The use of technology in text messages has certain limitations as pictures, images, and emojis, to make the message more informative and impressive. The use of multimedia message and WhatsApp message may take over the use of simple text messages. Also, more information is required as to how the message to be enhanced. This study provides a gateway to the technology in the field of hospital administration with the sole purpose to improve the functioning of the departments in compliance with the orders/policies/acts of GOI.

The suggestion taken to improve compliance of the messages suggests that the effect of text messages can be augmented by imparting training, awarding staff for improved behaviour, and expanding the scope of simple text message into more vibrant use of multimedia Whats App messages. It also reflects on rapid change in technology advancement for the vibrant platform for disseminating information.

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